VOLUME XI NUMBER 4

The Physiotherapy Review

JULY-AUGUST, 1931

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Physiotherapy in Nervous and Mental Disease

By Clarence A. Patten, M. D.

Read before the Tenth Annual Convention of the American Physiotherapy Association, June 9, 1931

Physiotherapy has an ancient lineage and has been an essential feature in the alleviation of many types of disease and defect since the earliest records of mankind. By necessity, because of the limited knowledge of medicine, physical methods of treatment were widely used in ancient times. Oftentimes, however, the fact that it was physical therapy was lost sight of in the various religious or other ceremonies that were employed to drive out disease, and the healing process was as likely as not attributed to divine power or satanic influence.

In the field of nervous and mental diseases it can plainly be seen that there exists today, as in earlier times, a relationship between physiotherapy and psychotherapy, the one method of treatment supplementing the other. Our methods today are not dissimilar, though we carry them out under different names and with entirely different motives.

All unconsciously the ancient Greeks and Romans practiced mental and physical hygiene with a great measure of success. They struggled toward physical perfection, athletic prowess and beauty of form. In doing so they brought into use many ideas well known today regarding exercise and physical training. They applied modern methods for the relief of tired muscles and stiffened joints. The beneficial effects of the sun's rays, the application of massage, the curative value of water and heat were all well known and practically used. In those days such measures were not given the special name of physiotherapy, but the underlying principles were the same, and then, as now, such "treatment" helped to keep the body fit and the mind clear thereby preventing the occurrence of physical and mental disease and decay.

The writings of Hippocrates, Pythogoras, Asclepiades and many others mention prominently the physical means that were helpful in restoring mental health—though they did not always give the credit where it was due. During the Middle Ages physical therapy, like medicine and learning in general, was subordinated to the over-lordship of religious fanaticism and politico-religious tyranny. As a result it was not until recent times that physiotherapy obtained a scientific start under more favorable auspices.

The subject assigned to me for presentation at this meeting was Physiotherapy in Mental and Nervous Diseases. For the most part I would say generally, that there is no distinction technically between the therapy used in these conditions and that of other physical disorders, but there are many points of general interest which I think it would repay us to consider briefly.

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primarily designed to assist—and I want to place proper emphasis on the term *to assist*—the constitution of the individual to reach a better state of health. A mistaken idea common to all physiotherapists is that they are healers, that they have a *means of cure* in their possession. That idea is wrong! Physiotherapists do not cure, they merely assist the individual to cure himself. The doctor's skill lies mainly in the application of his diagnostic skill and knowing precisely when to do something and when to leave things alone. So let us start off with the understanding that physiotherapists are *not* healers in the truest sense, but that they are really *"treaters."* We will leave the word "healers" with its false interpretations to those who practice neck wringing, rib cracking and body stretching, for science has carried us to a point where we believe and know that the laying on of hands or the playing of Yankee Doodle on the vertebral column will *not* dispel gall stones, cure intestinal obstruction or heal a fracture of the knee.

The principle underlying all physiotherapy is making use of the knowledge we have of anatomy, physiology, chemistry, metabolism and the inherent reparative processes of the body, to guide us in the use of the proper mechanical procedure which will assist the patients to make the speediest and most complete recovery. That physiotherapy is of incalculable value in neuropsychiatry goes without saying, and the art of its application lies in knowing its limitations.

In nervous and mental diseases, either organic or functional, massage, hydrotherapy, electrotherapy, exercises and manipulations are all used when and where indicated. An organic affection such as the severance of a peripheral nerve calls for massage, galvanism and perhaps heat to the area which that nerve ordinarily controls. This is done in order that the muscles, joints and tendons will be kept in the healthiest state possible while the nerve regenerates. The procedures employed do not heal the divided nerve—in fact they are useless to help or hinder the process of repair. Then let us ask ourselves—do we cure the condition? The nerve regenerates spontaneously, through the medium of the natural tendency of tissue to repair its own defects. We merely help out by seeing to it that when the nerve has completely regenerated the muscles it supplies are in condition to be used, the joints freely movable and that no disabling contractures have formed. Physiotherapy has merely aided or assisted the patient to the speediest use of the paralyzed area.

In hemiplegia—paralysis of one-half of the body due to rupture or plugging of a blood vessel in the brain—massage and manipulation is instituted early on the paralyzed side in the expectancy and hope that some natural return of power will occur in the nerves which originate in the brain area that is affected. Of what value is it for the brain cells to function if the muscles they control are atrophic and fibrosed, or the joints of the upper and lower extremities so ankylosed that nerve force is ineffectual? Treatment is aimed at keeping the affected limbs in the best possible condition so that when and if nerve power is re-established a properly working limb is there to be used.

In the realm of mental disease—that is the psychoses—physiotherapy is used to increase metabolism and maintain the tone of muscles, blood vessels and nerves. Such treatment is undoubtedly of value if carried out over a considerable period of time, even though we know very little about the basic changes in the brain cells that have made possible the development of a disease of the mind. To help in the reestablishment of proper mental control, all physical processes must be kept up to a level of normal physiological function, for the central nervous system of necessity depends upon the rest of the body for balanced metabolic activity.

In the functional nervous disorders, such as hysteria neurasthenia, and anxiety states, the same general principles apply. Here, however, greater understanding is demanded of the physiotherapist, because of the abnormal psychology of the patient. These so-called "nervous" people are very suggestible, live in constant fear regarding their state of health, and all too readily acquire unnecessary and harmful additional symptoms. Physiotherapy has a very wide use in such cases, and we employ such measures as isolation, complete rest, daily general massage, hydrotherapy of one form or another, not infrequently mild faradism, occasionally selected exercises, and sooner or later occupational therapy in some form. These measures alone, however, are not sufficient to bring about restoration. The physician in charge must become thoroughly acquainted with such patients and analyze carefully their psychological problems and emotional disturbances. It is often necessary to completely reeducate them in their viewpoint towards life. They must believe that they can and will recover and be aroused to an interest in something in life outside themselves and their symptoms. It is in this group of cases that physiotherapists can be of greatest value, but sometimes may do a great deal of harm. The way in which harm comes most frequently to nervous patients is not in what the physiotherapist does, but in what he or she says. With the patient's enormous susceptibility to suggestion, the mention of another patient's condition, or the report of a bad outcome in a similar case is quite enough to fill the patient with misgivings regarding his own recovery, or add new eymptoms to his already large list.

Mechanical therapy in these cases is not an end in itself perhaps, but it is the idea—the psychological effect of the treatment principle—that produces results. One might almost say that physiotherapy should be given psychologically to nervous patients.

In treating these cases it is unwise for the therapist to talk about himself or herself, for the patient often feels that such a topic of conversation is robbing him of his own center of interest, or else creates in his mind a dislike for the physiotherapist which negatives the good results that otherwise might come from the procedure. Above all things the patient needs to be soothed and quieted, and this cannot be accomplished if the operator talks continuously, which I fear is a very natural tendency amongst some.

Furthermore the patient needs to have confidence in the procedure and faith in the physician who prescribes it and the physiotherapist must aim to preserve that mental attitude in the patient. Oftentimes a single word of criticism of the doctor, or an insinuation that some other method of treatment would be better suited to this individual case is enough to destroy all the good that has been accomplished over a long period of time. No matter how certain a physiotherapist may be that good results might be had from a change of treatment, such ideas or suggestions should be made only to the doctor in charge.

There is an art in being a good listener and some of the best physiotherapists I have known rarely ever talk to their patients. Being silent commends itself to the patient and he often mistakes it for keen interest. The physiotherapist must likewise be tactful and gentle in his manner of approach and general bearing. These patients are peculiarly susceptible to harshness and vulgarity and can easily work themselves up into a condition of emotional tension which is not what the treatment is designed to accomplish.

Before concluding I want to mention briefly some observations concerning the general topic of physical therapy. It is well known that in recent years a more widespread interest has been aroused in this part of the healing art and to such an extent that the American Medical Association has a committee appointed, whose duty it is to make a careful inquiry into physiotherapy from a definitely scientific and educational standpoint. From the activities of this committee I hope and feel assured that medical colleges will devote more time to the teaching of this subject and physicians-in-the-making will graduate with more actual and practical knowledge than they have ever had before. They will have a greater familiarity with the whole subject and a clearer appreciation of its uses and limitations. It is because of neglect of the subject that so many illegitimate "paths" and "isms" have sprung up all over the world.

When physiotherapy has reached the position it deserves in medical practice, physiotherapists will be expected to confine their activities to the carrying out of prescriptions written by physicians. This means that the maintenance of separate establishments with physiotherapists advertising for patients will have to cease, and in their place will arise properly equipped and medically supervised departments of physiotherapy. It will no longer be possible, as it is now, for physiotherapists to receive a patient who comes without a prescription, examine him, diagnose some difficulty or other and proceed with treatment. Such activity is, of course, the illegal practice of medicine and never has been nor never will be a credit to physiotherapeutic art and skill. The American Physiotherapy Association will, I am sure, see to it that so valuable an adjunct to the science of medicine will not be degraded by unethical methods, which if not actual quackery are very closely allied to it.

The standards of preliminary education for those who enter this field of work must be raised and compensation increased to a figure that is commensurate with all other types of skilled and technical professional endeavor. With sound basic principles and a strong controlling national organization, physiotherapy will soon attain proper recognition and hold the place in the relief of human ailment that its science deserves.

2037 Delancey Street, Philadelphia, Pa.

Approved Schools of Physical Therapy

The following is a list of schools and courses in Physical Therapy which have shown cooperation with the Committee on Education by submitting their present curricula for consideration and by stating their willingness to adjust their courses of training to meet the requirements of The American Physiotherapy Association.

Schools of Physical Therapy

Beth Israel Hospital
Newark, New Jersey
Dr. Jerome Samuels

Bouve-Boston School of Physical Education
105 South Huntington Avenue
Boston, Massachusetts
Miss Marjorie Bouve

Children's Hospital
Sunset Boulevard
Los Angeles, California

New Haven School of Physical Therapy
303 Whitney Avenue
New Haven, Conn.
Dr. Harry Eaton Stewart

School of Physiotherapy of the Graduate School of Medicine of the University of Pennsylvania
Philadelphia, Pennsylvania
Miss Eleanor Lynn

Southern California School of Physiotherapy
San Gabriel, California.
Dr. William W. Worster

Tacoma General Hospital
Tacoma, Washington
Miss Ruth Babb

University of Michigan Hospital
Ann Arbor, Michigan
Miss Mabel E. Holton

University of Wisconsin
Madison, Wisconsin
Dr. H. D. Denniston

Walter Reed General Hospital
Washington, D. C.

Courses in Physical Therapy

Harvard Medical School
Course No. 445
240 Longwood Avenue
Boston, Mass.

Northwestern Medical School
303 East Chicago Avenue
Chicago, Illinois
Dr. John S. Coulter

Short Courses in Physical Therapy

Harvard Medical School
Courses for Graduates No. 441
240 Longwood Ave.
Boston, Massachusetts

University of Iowa
Iowa City, Iowa
Dr. Arthur Steindler

The Treatment of Non-Paralytic Curvatures of the Spine

By George Wagoner, M. D.

Read before the Tenth Annual Convention of the American Physiotherapy Association, June 10, 1931

Spinal curvatures consist of contour deviations from the recognized normal. These fall into two groups: anteroposterior curves and lateral deviations or scolioses. Combined with these two groups and frequently comprising a major portion of the deformity is that of vertebral rotation.

Let us first consider those deviations from the normal which take place in the anteroposterior plane. Such deviations consist of exaggerations of either the thoracic or the lumbar curves or in the diminution of these curves. To such variants have been given the divers general terms of "round shoulders," "hunch back," "sway back," "kyphosis," "lordotic spine," "visceroptotic spine," etc. The causes of these various deviations from the accepted normal are to be found either in structural defects of the vertebrae; disease processes within adjacent structures, especially the thorax; muscle paralysis and muscle imbalance; and most important, heredity.

Structural defects of the vertebrae resulting in anteroposterior spinal curvatures are to be found chiefly within the bodies of the vertebrae and are present either as a developmental abnormality or as a disease process. Disease processes manifest themselves by destruction of the vertebral bodies with collapse and resultant exaggeration of the anterior curves. Arthritic processes through the formation of new bone and the fusion or ankylosis of adjacent vertebrae produce a rigid spine which may be fixed in either exaggerated anterior or posterior curvatures.

Disease processes present within the thoracic or abdominal viscera produce secondary changes in the anteroposterior spinal curves by impairment of the secondary supporting structures, such as the thoracic cage in empyema, or through the medium of pain and the resulting muscle spasm.

Abnormality of the anteroposterior curve resulting from paralysis of peripheral nerves and consequent flaccidity of various muscle groups with resultant muscle imbalance does not fall within the scope of this paper.

Thus far in considering the various etiological factors at work in the production of the anteroposterior curvatures we have not deemed it necessary to define normal curves or, more properly, "posture." The abnormal spinal curves resulting from vertebral tuberculosis, infantile paralysis, empyema and other primary conditions are usually so pronounced and definite that they do not necessitate examination by a skilled individual to determine that deviations from the normal exist.

But when we come to consider the part played by heredity in the production of so-called abnormal anteroposterior curvatures it behooves us to first determine, if possible, what constitutes the normal curves.

Correct posture, like beauty, is in the eye of the beholder. I can find no absolute mathematical definition of what constitutes correct posture. I can find no anatomical description of the inter-relation that should exist between the various structures when the body is in a position of good posture. I have been unable to detect any uniformity in the artistic conception and depiction of perfect body posture. I note that the posture teachings of the German danseuse, Mary Wigman, while accepted abroad are rejected here. I note that the Boston definition of posture is not that which is taught at Columbia. I see that posture differs with nationalities and races: (the posture of the white man is not that of the negro). I have seen that the posture of the American girl is different from and vastly inferior to that of the German girl; that the posture of the college girl is unlike that of the factory worker. And finally, I know that spine and body postures are catalogued into groups A, B, C, and D or filed under other arbitrary indices. But I do not know what comprises posture A, or when a posture should be grouped in class C, or when a posture changes from class D into class C, if it does change. In other words, what criteria make an individual's posture good, bad, or indifferent? I am afraid we are back at our starting point—that good posture is in the eye of the beholder.

Sufficient attention has not been paid to the determining influence of heredity upon the various spinal curves. With the exception of Roger's work, I have not seen heredity considered in relation to posture. That an individual can be born with a lordotic or kyphotic spine is as reasonable as that he can be born with an aquiline or pug nose, with blue eyes or brown, with large feet or small. An individual's anteroposterior spinal curves are determined by the same factors that determine the texture of his hair, the color of his eyes and the pigmentation of his skin excepting in so far as these curves may be secondarily modified by disease processes and, in rare instances, by adaptation to the exigencies of an arduous occupation.

It is interesting to note that the anteroposterior curves present at the age of two and a half years persist unaltered throughout the major portion of the individual's life or until the structural changes associated with senescence set in. Though you damn me for heresy, I believe that excepting for the ravages of disease, of severe occupational traumata and of old age the anteroposterior spinal configuration peculiar to an individual remains unaltered and unalterable throughout that individual's life.

By posture training and muscle exercise the carrying position of the head and shoulder girdles may be changed, but I have never seen any permanent change in the major anteroposterior spinal curves result from even the most prolonged and expert physical therapy measures. It is only necessary to examine data from schools and colleges where exacting posture work is done and accurate measurements are recorded to see that under the most careful supervision and training the number of poor postures

detected in an entering class has not been diminished when that class graduates four years later.

Again I wish to state that with the exception of operative measures I do not believe that the major anteroposterior spinal curves can be permanently altered by exercise and posture training.

When we come to a consideration of lateral curvatures of the spine either with or without rotation, we are on secure ground in regard to the definition of the normal —any deviation from the vertical is abnormal.

The etiology of lateral curvatures is much the same as that of anteroposterior curvatures with the exception that congenital spinal anomalies and deformities which may be present result more frequently in lateral deviation than in anteroposterior deviation. The presence of extra half vertebrae and of abnormalities of vertebral structure from the very mechanics of the defect result in lateral curvatures. If one half of the pelvis is smaller than the other or if one lower extremity is shorter than the other the superior surface of the sacrum will not be level and the spine will have to compensate by the establishment of one or more lateral curves.

Excluding from consideration lateral curvatures due to congenital structural abnormalities and those resulting secondary to disease processes, we have a large group remaining. This group is designated as Lateral Curvature of Static Origin. Some authors state that this class of scoliosis is really the result of unrecognized and relatively minor paralysis. It is safe to say that regardless of the fundamental cause, this group of Static Scoliosis is due directly to muscle imbalance. It is unnecessary to consider the muscle group or groups which may be involved to produce lateral curvatures. It is well, however, to recognize degrees of severity which may be designated as "mild" or "severe."

The treatment of statistic scoliosis has tried the ingenuity of man throughout many centuries. Numerous clever devices and systems have been created and have had their faddy day.

These methods of treatment can be grouped into several types depending upon their basic characteristics: (1) Fixation of the spine either in a partially corrected or entirely uncorrected position and designed to prevent an increase of the deformity and relieve pain by transferring the stresses. Fixation has been of two kinds: (a) internal fixation by spinal fusion or graft, (b) external fixation by brace, cast or jacket. (2) Mechanical passive correction of the deformity and attempts to overcorrect. To accomplish this result various types of braces and jackets have been devised: frames, apparatus, traction straps and pressure pads. These various devices have been used with the patient ambulatory or confined to bed. (3) Voluntary but supervised muscle training. Here through graded exercises, apparatus work, manipulation, and posture training the attempt has been made to correct the deformity by strengthening the muscles whose weakness resulted in the deformity.

Various combinations of these three great treatment groups have been employed.

It is the third group in which you are personally interested and it is the results of this form of attempted correction which I wish to evaluate.

As I have watched numbers of individuals over a period of from four to five or more years report back for examination I have failed to note any permanent correction or improvement of the basic deformity. I have quite frequently noted an increase in the deformity. It is true that there has been improvement in the general body vigor and muscular development; the hollows have been filled in, the deformity arrested and apparent improvement or correction obtained. This improvement or correction is only apparent as careful examination and x-ray study has shown the existence of the original deformity.

These observations also hold for the second or mechanical measures of treatment. I believe that the failure of these measures can be laid to bony changes which have taken place in the vertebrae and the existence of which at once precludes correction.

I have, therefore, been forced to the conclusion that the only rational treatment for the "severe" static scoliosis is in internal fixation after obtaining the maximum of transitory mechanical correction possible. The "mild" static scoliosis when symptomless, can be allowed to grow old in peace and comfort and without the doubtful benefit of annoying exercises or manipulation.

Indications for Electrotherapy, with Emphasis on Electrophysics

By Joseph Resnik, M. D.

Read before the Tenth Annual Convention of the American Physiotherapy Association, June 11, 1931

Electrical Constitution of Matter

The modern conception of matter is that it consists of various combinations of ninety-two (92) elements, the last of which, we were informed, was discovered recently. These elements in turn are made up of atoms. Each atom is a product of a definite number of positive electrical charges (Protons) and an equal number of negative electrical charges (Electrons). No two of these elements or their respective atoms are alike. But the protons and electrons of which they are all made up are identically the same. Thus we arrive at the conclusion that matter and electricity are basically alike. It is therefore small wonder that we turn to this energy to aid us in the restoration of health and function to the human body which is fundamentally electrical in character. It is obvious that the development of this specialty will go hand in hand with the progress made by the scientists who carry on their research in the realms of physics and chemistry as well as the careful observations made by the keen physiotherapeutic clinicians.

Electro-thermic Effects

Many pathologic conditions, we find, are greatly benefited by an augmented local blood supply. This can be accomplished when the part is treated by means of heat radiating from a luminous source or infra-red elements. When the electrical current forces its way through a conductor it meets with resistance. In overcoming the latter it generates heat, which turns the conductor, depending upon the amount of energy expended, either red-hot or white-hot. This explains the basis for heat and light supplied by the various electro-therapeutic lamps, whether they are of the infra-red or luminous heat type. The former lamp is supplied with an infra-red element; the latter with a bulb.

In the past, all forms of heat treatments were termed "baking." At present, when we use heat which radiates from a distant source, we speak of it as "radiant heat." There are various lamps of this type.

The *hand lamp* is usually equipped with a 200-250 Watt bulb. Frequently, its rays converge to a focus on the part of the body treated with a resulting burn.

The *larger bulb lamps* (1000 or 1500 watt) are generally so constructed that their rays run parallel to each other and are therefore safer. These stationary lamps cover a larger part of the body and do not consume much of the operator's time. These are the lamps of choice for the treatment of painful backs. Care should be taken in the treating the upper back and neck of female patients that the hair or celluloid hairpins and combs do not burn.

The *hood baker* is especially adopted for extremities, although when placed in an upright position it can be adjusted to other parts of the body. The curvature of this apparatus is an added advantage as it permits the heating of three aspects of the part treated, simultaneously. There is a tendency on the part of some operators to cover the hook baker with a blanket in order to prevent dissipation of the heat generated. This is likely to cause a burn, particularly in a busy clinic, where individual attention is likely to be inadequate.

The *electric bath cabinet* is a time saving device. When we are called upon to treat several joints at the same time, or when perspiration is desired as in some nephritic conditions, this appartus answers the purpose admirably. This treatment should be followed by hydrotherapy in the form of shower and spray in order to avoid chilling of the body.

Whirlpool bath offers the combination of heat and massage and is particularly indicated in the treatment of circulatory disturbances in the extremities. In these cases great care must be exercised not to cause a burn. The latter being due to the poor heat dissipation incident to the impaired circulation.

All the above mentioned forms of thermo-therapy are limited to superficial penetration. When heat in deep-seated tissues is sought we resort to *diathermy*. This is one of the modalities of the High Frequency currents. These currents are characterized by high voltage and a high number of oscillations (a million or more per second). Hence, the term High Frequency.

In overcoming the resistance offered by the part treated to these oscillatory currents, the electro-magnetic energy is converted into heat. We are therefore dealing here not with heat as such radiating from the High Frequency machine but with conversive heat generated in the tissues proper.

Employing the correct technique with this modality, one is enabled to localize the maximum amount of heat with fair precision practically in any part of the body. For this reason diathermy is of great value in the following conditions:

Fractures; as a result of prolonged immobilization the adjacent joints become stiff. Massage and exercise, in the course of time, will solve the problem in many instances but by far not in all, and certainly not as speedily as is the case when these forms of treatment are preceded by diathermy. Just as massage of muscles is more effective when preceded by radiant heat, so is the effort to restore motion in a stiff joint facilitated when it follows diathermy. In delayed union or non-union diathermy is indicated.

Arthritis, as a class, rivals fractures and perhaps claims a larger number of painful and stiff joints. In the acute cases of this type massage is contra-indicated and motion, in the absence of heat is, as a rule, painful and likely to aggravate the condition. In the chronic

cases massage and motion have their merits but are not nearly as effective as they are when following diathermy, ionization, or static sparks. Arthritis is a very serious matter. It not only causes suffering to its victims but it constitutes an industrial problem of grave concern. An improved blood supply to an arthritic joint tends to ameliorate the condition. Arthritis may be divided into several groups, such as, atrophic, hypertrophic, infectious, gonorrheal and traumatic. In addition to diathermy other treatment may be indicated. Thus in atrophic arthritis ultra-violet ray will aid in the deposit of calcium. In infectious arthritis the finding of foci of infection and where possible, remove them, is a wise procedure. In gonorrheal arthritis the characteristic treatment is the all important. In traumatic arthritis partial immobilization between treatments, massage and motion following diathermy are of great value.

In Bursitis, particularly of the subdeltoid and subacrominal type the value of diathermy has been recognized by many physicians and surgeons. Not only are pain and stiffness yielding to the treatment but the x-ray shadows signifying calcification are thereby caused to disappear. Thus, physiotherapy saves the patient very frequently a surgical operation.

Time does not permit me to go further into the indications for diathermy, except to mention some of them by name. Pneumonia, Bronchitis, Asthma, Sprains, Dislocations and various Gynecological conditions have been treated by this modality.

High Frequency currents are being employed in electro-surgery, particularly for the purposes of destroying malignant growths. The progress made in this field is largely due to the splendid work carried on by Dr. William Clark of this city, Dr. Kime of Indianapolis and Dr. Wyeth of New York.

There are other modalities of the High Frequency currents such as the mono-terminal application of the higher voltage and lower amperage—Saturation, and the bi-terminal application of lower voltage and higher amperage—Auto-condensation. The former has greater penetrative power and the latter more a generalized diathermy—namely a heat producer. In combination these two modalities are being used in the treatment of hypertension. Claims have been made that these currents possess the property of raising the plane of metabolism.

When High Frequency currents are applied to the body by means of a non-vacuum tube a superficial hyperemia will result. While a vacuum tube used in similar manner will tend to exert analgesic effects. The violet color manifested by this modality and its name, violet ray, are causing some people to confuse it with ultra-violet ray, which has entirely different properties and is of much greater importance therapeutically.

We have, so far, considered diathermy as well as some other modalities of the High Frequency current from the standpoint of heat production and its localization in deep seated tissues. These facts have been proven, experimentally. That the application of High Frequency currents in the treatment of some diseases have produced desirable effects, is now common knowledge among modern clinicians. The question arises as to whether these desirable effects were wholly due to the heat. Some of us find it hard to conceive of the fact that an energy, like the one employed here, operating under a pressure of thousands of volts and oscillating through the diseased part a million or more times per second does not tend, in addition to generating heat, exert some other influence which contributes to the benefits derived. This, of course for the present is mere speculation.

ELECTRO CHEMICAL EFFECTS

The galvanic current is characterized as a chemical current on account of the definite chemical changes which it produces at the respective poles. Some of these polarity effects are of therapeutic value. We resort to the positive pole for purposes of relieving pain or to bring about vaso-constriction. Negative galvanism may be used for nutritional purposes by virtue of its vaso-dilative effects. As it tends to liquify tissues its use is indicated in the treatment of hard and unyielding scars and contractures. Aside from its intrinsic therapeutic value this current is used as a vehicle to carry into the body, locally, certain substances of medicinal value, such as salicylates, chlorine, lithium, iodine, etc. This method of treatment is known as iontophoresis or ionization. Here, too, there is a speculation theory to the effect that this direct current causes transmigration of ions within the tissues.

MECHANO ELECTRIC EFFECTS

There is also a mechanical aspect to electrotherapy. This branch comprises of the sinusoidal, faradic, interrupted galvanic and static currents. These forms of electricity produce visible contractions of muscles varying from each other in degree and kind.

The interrupted galvanic and faradic currents are chiefly used in electro-diagnosis, in cases of paralysis of peripheral nerves. These, in combination are employed in the form of a test known as R. D. or Reaction of Degeneration. This test determines fairly accurately the degree of paralysis. Prognosis, which is anxiously sought by physician and patient alike, can be based on the results thus obtained. Interrupted galvanism plays a part also in the treatment of these cases. The faradic current on account of the unpleasant sensation that it gives to the patient is seldom used except in the test mentioned above.

For therapeutic purposes we are now using a class of more pleasant currents, namely the sinusoidal. These cause more graded contractions followed by relaxations of muscles. These currents have a somewhat wider range of application. In a general way they are used in cases that lack of muscle tone. Sinusoidal treatment has been so widely advertised as a successful method of combating constipation that some are inclined to look upon this as being a panacea for all forms of this condition. We must remember that we are dealing here with a complex etiology which calls for discriminative judgment.

Flabbiness of musculature may be corrected by this treatment. Under certain conditions, such as a cardiac involvement, this treatment may be preferred to exercise.

Certain types of obesity may respond favorably to sinusoidalism. Numbness and tingling sensations are frequently relieved by these applications.

In flaccid paralysis this treatment seems to be rational. Obviously, its use is contra-indicated in the spastic type.

Static sparks produce a deep seated muscle contraction. These mechanical effects have a tendency to limber up stiff joints but certain precautions should be observed. For instance, large varicose veins, in my judgment, constitute a contra-indication to static sparks as there is a danger of their being ruptured. In hypertrophic arthritis with spur formations, static sparks are likely to relieve the stiffness, but if they are made to be very powerful they may cause a chip-fracture.

Another form of the static current to be used in stiffness is Morton's Wave. This is a milder, more rhythmic and pleasanter contraction-producing current. It is frequently used as part treatment in certain prostatic conditions with beneficial effects.

Static breeze for its sedative effect and blue pencil brush discharge as an analgesic measure, although not of the mechanical type are mentioned here in connection with the other two static modalities. I have been very much impressed by the effectiveness of the blue pencil discharge in allaying the excruciating pain in many cases of thrombo-angiitis obliterans.

PHOTO ELECTRO THERAPY

In a lecture recently delivered at Harvard University by Sir James Jeans of England, he stated that a positive charge of an atom equalled the negative charge and when the two dashed together the sum was zero. He further stated that all radiation comes from some kind or other of atomic upheaval. Each upheaval gives rise to a flash of radiation which passes through space almost like a bullet fired from a rifle. This being so, it leads us to visualize a universe as consisting of matter which was continually suffering from annihilation and producing radiation as a consequence. Such radiation as was created in this way in the outer depth of space reached us as cosmic radiation, while that generated in the interior of the sun and stars was changed in quality in the process of fighting its way out through the star and reached us as ordinary sun-light and star-light.

This is a vivid description of the modern conception of the source of light as well as of other radiations, but these notions are more consistent with the Quantum theory of light. There are others who still hold to the wave theory which is analogous to the one of sound. Other scientists find that neither theory *alone* can solve all problems of light and therefore they combine the two.

In discussing ultra-violet ray it is customary to talk in terms of wave length.

The spectrum analysis of white light shows that it consists of various rays, visible and invisible. Among the latter we find ultra-violet rays. The quality of these rays is said to vary with their wave length as measured in terms of angstrom units. (1/10,000,000 M M). Ultra-violet rays may be obtained from sun-light, but this depends upon weather conditions as well as various other circumstances which are not always under our control. For this reason we are obliged to resort to artificial sources of ultra-violet rays, namely, the quartz mercury and carbon arc lamps. The former comes in two types, air cooled and water cooled. Some state that the air cooled lamp emits intense radiations of "near" (long wave length) and a lesser amount of "far" (short) ultra-violet rays while the water cooled produces rays prepondering in the far ultra-violet ray region.[1] In the carbon arc lamps Dr. Coblentz of the U. S. Bureau of Standards at Washington reported that carbon A or "sunshine" produced more of the longer wave lengths analogous to the sun-light at noon on a June day.

As it is believed that the shorter rays are more effective immunologically, the longer ones biologically, we can choose our lamp or carbon according to the condition we are to treat from the standpoint of its pathology. However, I am not quite certain that there is a difference in wave length between the two types of quartz mercury lamps and therefore my choice rests for the present on a purely anatomical basis. Where the air cooled can not be conveniently applied, as in body cavities and pus discharging sinuses, I employ the water cooled lamp with an appropriate quartz applicator; on the other hand, for large area irradiation, I prefer the air cooled.

Generally speaking ultra-violet radiation tends to build up resistance to the invasion of micro-organisms and aids in deposition and retention of calcium. The theory of its actuating ergosterol and building up Vitamin D or any other vitamins is only of academic interest. It has been demonstrated experimentally by Drs. Hess, Steenbock and Bouve[2] that ultra-violet ray exerts a profound influence on the growth and development of chickens. Dr. Edinow[3] found a 7% increase in the bactericidal powers of the blood in 85% of the 200 cases which he treated with ultra-violet ray.

The pediatricians have recognized the importance of ultra-violet ray therapy in rickets. The surgeons are gradually becoming aware of the fact that this "light" hastens the healing of wounds and bone regeneration in osteomyelitis. Some internists have admitted this "lamp" treatment into the family of general tonics and use it in cases of general debility. I have seen many cases of Herpes Zoster yield to this treatment. It is indicated in furunculosis, cervical adenitis, bronchitis, T. B. peritonitis, and septicemia. Some cases of pruritis ani and vulvae have responded to ultra-violet ray therapy and others have not. I am prescribing it in conjunction with diathermy in delayed union of fractures, bone provosity and atrophic arthritis. I have seen its beneficial effects in the treatment of burns.

Diathermy, radiant heat, ultra-violet ray, massage and motion stand out pre-eminently but we must not forget the other physiotherapy modalities.

In conclusion, I wish to state that physiotherapy has made considerable progress during the great war and the period of peace that followed it, but there is still room for the research laboratory in the investigation of the properties of the electrical currents and their effects on the human body in health and disease. The manufacturers of physiotherapy apparatus, I am sure, will find means and ways of standardizing the machines so that they may register with greater precision the forms of electrical energy which they deliver. These accomplishments will enable the physiotherapeutists to record with greater precision the effects of the various physiotherapeutic measures in restoring the body to its normal state of health.

536 Commonwealth Ave., Boston, Mass.

[1]Physiotherapy. F. Howard Humphris, 1930. Page 105.

[2]Bi-Physics of Ultra-Violet Ray Light. Boston Med. and Surg. Journ., August 27, 1926. Page 395.

[3]Dr. Edinow: British Journal Actinotherapy and Phys. Ther. Mar., '31.

Some Methods for Gaining Relaxation

By Josephine L. Rathbone

Read before the Tenth Annual Convention of the American Physiotherapy Association, Philadelphia, June 8, 1931

A few weeks ago when some of us were discussing the subject of how to assist patients to relax I overheard a physiotherapist say, "Well, this is very interesting, but I do not see where it applies to my work." I beg to differ with her opinion, for it seems to me that there is no method of treatment more applicable to all manner of complaints and defects than rest and relaxation, and no method of treatment more in our line. Everyone interested in the art of healing must know something about the good offices of rest and sleep, and how to bring them about, for they are the modalities which nature herself has chosen to keep the body in good condition and to repair it when that is necessary.

Rest alone accomplishes a great deal in the treatment of disease. Witness the use that is made of it by the medical profession in post-traumatic lesions, in all infections, and in such systemic conditions as heart disease and pulmonary tuberculosis. We are all familiar with the fact that in neuroses there is failure to relax in the early stages, leading finally to neurasthenic exhaustion. This same nervous element, moreover, is to be found in a large variety of diseases, and debility and lowered resistance are not peculiar to neurotic patients. The hypertension and hyperactivity which precede, and in fact, cause most exhaustion manifest themselves in an increase of the reflexes, in a mechanical muscle and nerve excitability, in spastic condition of smooth muscle and in abnormal excitability of the heart and respiratory apparatus.

As we all know, because of reflex conditions the nervous system cannot be quieted except in conjunction with the muscular system: when the muscular system loses its tenseness the nervous system responds. This fact gives us a method of managing the nervous element which appears in such a variety of diseases, because the skeletal muscles can be placed under the will and directed consciously. By economizing the energy output in muscular terms, we can bring about release of tension throughout the body in the interests of the general state of health.

Of course it will always be necessary to relieve, as much as possible, the conditions which have brought about the neuromuscular tonus and contraction. Toxic conditions must be removed and the sources of pain, discomfort, and anxiety corrected. No discussion of methods of bringing about relaxation should ever neglect the fact that underlying causes of tenseness, whether physiological or psychological, should have the very best medical attention available. Our present consideration, however, is of how to induce a release of tension in the entire body or a part after such a state has become reflex or chronic.

Hyperexcitation and hyperirritation cause all degrees of restless behavior and rigid posture, general throughout the body or localized in some one region. For the purposes of this discussion I wish to differentiate three methods for gaining relaxation, which are in our province, and which we may use for varying degrees of tenseness. We may call them first, second and third degree, if you like.

In the first place, it is possible to consider relaxation in the layman's sense of diversion and recreation. In milder cases of tenseness very good results may be realized from change of scene and occupation. I believe that we may even consider such prescription to be in the province of physiotherapy. Special or corrective exercise surely is, but too often general exercise is left out of a corrective program. Walking in the fresh air, because of its rhythmic quality, and because it usually furnishes a change of outlook, frequently brings release of tension. There are other forms of recreational exercise that are especially helpful. I have known an eminent gynecologist to prescribe aesthetic dancing to many of his patients, mainly to induce psychological and localized muscular relaxation. There is no question that when physical exercise alternates with rest one prepares for the other, and the rest is likely to be more sound as a result. In passing we should mention that sun therapy is of special value is bringing about states of satisfying relaxation.

There are times, however, when the patient should not be turned loose to get his own relaxation; should not have more exercise. There are cases for which we wish more than anything else to induce sleep, knowing that when that is gained the body will get the required rest. Simple methods to induce sleep I shall designate as the second form of therapeutic relaxation. We have all used the tepid bath for this purpose. If we have not it is time that we began. Just this past week I saw a spastic paralysis case responding in a remarkable way in a warm water immersion. With the force of gravity reduced and with the muscles and surface of the body soothed by the uniform temperature, the little body was able to do what it had never done before when in a conscious state. We also have used general massage and passive movements to induce sleep. In the hands of most of you that has brought great relief, I know. We have also used soothing, reassuring tone of voice with our cases to bring the desired results. Although we should be genuinely critical of any technique suggesting hypnotism, there is no objection to putting our subjects in a frame of mind conducive to sleep. So much tenseness is due to fears and anxiety, and to lack of faith in one's own ability to meet the future. You are all familiar with the very splendid work done by some religious faith healers. Instead of being too critical of their contribution we should be grateful that they have found a means of bringing comfort and relief to sufferers who have not been helped by the more orthodox methods. Any comfort people may get from religious sources is not to be scoffed at in this harsh period of materialism.

But sleep does not give complete muscular relaxation at all times. This brings us to a discussion of relief for a type of hypertension which is very baffling. Due to constant excitation of the neuromuscular system the body often becomes chronically tense. The reflex and voluntary activities in such cases interfere with complete rest, and so disordered states in any part of the body are maintained and aggravated. In all of these cases a residual tension in the muscles may be noted. Even after the person has been subjected to some form, or all forms of treatment suggested above he is still hyperexcitable or hypertensed. Frequently in sleep his body twitches spasmodically.

It has been my custom to insist that all the children and young women who have come to me for corrective exercises learn how to reduce the residual tension in their muscles. Relaxation of the type I am going to describe now has been the starting place and the central focus of much of my effort. Even though I have performed no scientific experiment as yet to prove or disprove the efficacy of my method I feel assured that time has not been wasted.

The person lies on a hard mat on his back. If there is no distraction in the room there is no special reason why he should close his eyes in preparation, for this entails some muscular action. The patient is told to make himself as limp as a rag, and to feel as if he is settling down into the mat. Then he is instructed not to do a thing: when he feels the operator lift an arm or leg he is not to assist, but let the part hang heavy in the operator's hand. It is very easy to detect whether or not the patient is assisting in the movements. First the operator lifts a hand an inch or two from the mat and lets it drop again. If the patient keeps it suspended in the air the operator may toss it a bit until the patient gets the idea of its becoming loose. Then the operator proceeds to raise the elbow from the mat and to loosen up the shoulder region. This frequently proves quite difficult, because most people under any nervous strain tense the muscles in this region. Finally, by folding the hand in such a way that the elbow is bent at a right angle, with the lower arm perpendicular to the mat, and by gently shaking the upper arm in many different positions it is usually possible to release the tension in the shoulder region. In like manner the head is rolled from side to side; the lower extremities are freed; and finally the entire body is so limp that it may be twisted and curved into all kinds of attitudes. It may take many treatments to get the whole body loose; but, in the mean time, the patient may be practicing at home, on the floor, to get the same feeling that he has been working for in the clinic.

One precaution is most important. The part of the body which is under treatment must be permitted to lie for some time just as it fell. If the patient is permitted to move it, even volitionally, it is a sign that the desired degree of relaxation has not been reached. Also he must be permitted to sense how it feels to be "loose," and that takes time. It should be mentioned in passing that, contrary to popular belief, there is no one lying position in which each body is most comfortable. The investigations of late at the Mellon Institute at Pittsburg have shown that in sleep the body moves considerably, and takes many poses. If insomnia is what the patient is fighting he will get results more quickly if he shakes himself loose and tries to "let go" in any position his body takes, rather than get into a set position which he thinks should induce sleep.

Dr. Edmund Jacobsen of Chicago has spent many years on a technique of relaxing. I recommend to you all his book, *Progressive Relaxation*, published by the Chicago University Press in 1929. His technique, as I understand it, and some variations of it I have tried and found very satisfactory. The principle is for the patient to study the sensations which accompany muscle tension. Under the observation of the doctor the patient contracts certain isolated muscles and muscle groups until he is sure that he recognizes tension. Then he is instructed to "go in the negative direction." Whatever it is that he does or does not do when he begins to relax, that he is to continue on and on, past the point where the part seems to him perfectly relaxed. This technique gives to the method the title—progressive. In the future, when the patient is away from the doctor, he is not to contract before relaxation, but to begin at the stage that he finds himself. I have found, however, in the early stages of training, that it is worthwhile to let a patient actively tense a part just before releasing it, even when he is practicing by himself.

The patient learns to localize tensions wherever they occur during nervous irritability and excitement and to relax them away. In Dr. Jacobsen's own words, "According to the present clinical and experimental experiences up to date, if the patient is shown how to relax the voluntary system, there later tends to follow a similar quiescence of the vegetative apparatus."

With both of the latter methods it is possible to train a person to keep part of his body relaxed while another part is in activity. Dr. Jacobsen calls this ability "differential relaxation." It is a very valuable ability. To be able to save muscular energy and economize in nervous expenditure is something which we all could afford to acquire. In these hectic days relaxation has a sociological as well as personal implication. Dr. Jacobsen remarks that persons who have been trained to relax will resort to voluntary relaxation at times of emotional disturbances. If we accept the recent teachings of physiology we shall expect an economy in neuromuscular effort throughout the body, and a more normal activity of smooth muscle and gland tissue. This will mean a better functioning of the entire body mechanism, and a relief of many symptoms now connected with pathological states.

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A Report of Some Experiences in Rehabilitation in Encephalitis

By Louisa C. Lippitt

Read before the Tenth Annual Convention of the American Physiotherapy Association, Philadelphia, June 8, 1931

The medical books and magazines are filled with articles written by doctors on the subject of Encephalitis Lethargica, and Post-vaccinal Encephalitis, the causes, symptoms and prognosis of these diseases. As far as I know nothing has been written on the subject of rehabilitation by physiotherapy. When I was asked to give a paper at this convention it seemed to me that a report of some of the cases which have been placed in my care for treatment, and the beneficial results of these treatments, would be of interest and might stimulate others of the Association to tell of their experiences, and that these might help us all to meet the problems which we are now having, and are apt to have in greater numbers in the future.

We believe that a way will be found to control encephalitis as has been done in diphtheria, yellow fever, typhoid, and other diseases; but so far medical science has not been able to check it and it is in almost all cases progressive. One can not think of encephalitis without dread of the distressing after-effects.

Before speaking of the specific cases which have come under my care, I will outline briefly the history of the disease.

Encephalitis appeared as an epidemic during the war, in France in 1915, in Austria in 1917, and soon became general in all countries. As late as 1923 epidemics were still prevalent in many parts of the world, particularly in England and Wales, reaching their height during the winter months. Today the disease has become endemic and sporadic throughout all countries, and cases are seen in all seasons of the year.

Encephalitis was at first believed to be a complication of influenza, but later it was definitely proved to be of independent nature the etiology of which still remains undetermined, but it may be brought on or directed against the nervous system by certain febrile or exanthematous diseases. It attacks children and adolescents and sometimes older persons though more rarely.

Encephalitis is a disease in which there is excessive inflammation of the central nervous system, with the lesions, as a rule, confined to the brain. The early symptoms are fever, drowsiness, and sometimes unnaturally prolonged spells of sleeping. The usual sleeping habits are often completely disorganized, the patient sleeping constantly during the day and staying awake at night. Later these symptoms may become more severe and the sleepiness become coma. The digestive organs may be involved when there will be both diarrhea and nausea. In many cases the eyes are affected.

At first even if there seems little injury following the attack, the patients are nervous, easily confused, and tired. Sometimes they become mentally slow and unable to stand responsibilities; they cannot be hurried or scolded without confusion. There is often a condition of aphasia and amnesia, there being not only a loss of words but of knowledge which they have had before.

Other more serious conditions which may follow the disease are paralysis of either the flaccid or spastic type; convulsions resembling epilepsy; mental weakening; and changes in the moral nature and behavior which manifest themselves in acts of roughness or cruelty absolutely foreign to the patient's former conduct. Sometimes the patient is left in a stupid sluggish condition of mind accompanied by marked lack of muscular coordination; and Parkinson's Disease is a not unusual complication.

The after effects are often more severe, and it is to relieve these that the patients are turned over to physiotherapists.

Institutional care is best for those whose conduct is affected, indeed unless the condition is only a minor one it should be considered the only method of treatment for the sake of the patient, the patient's family, and the community.

The first case of encephalitis which was placed under me for treatment was of this type. A boy of sixteen who was well grown, six feet tall, handsome face; and had been a good student well above the average. His chief interests had been history and writers of history; music and composers and performers. Even after his attack he read and studied along these lines, and could, and would, talk brilliantly for a while on either subject. But the sense of right and wrong, or responsibility on his own part were entirely lacking. He was not allowed to attend school, as he would pay no attention and disturbed the whole class room. At home he refused to follow out any routine, went to bed and arose at the hours that suited him, sometimes lying in bed all day, and eating irregularly but demanding food at any hour of the day or night that his fancy dictated. His posture was terrible, and he held his mouth open, his tongue hanging out and a constant drooling from his mouth.

He came to my office and for a while seemed to improve. As he wished to learn to use a typewriter, I started teaching him that, also giving him posture exercises, and playing cards with him. As he ate badly at home I had him take lunch with me, treating him as a guest, making no suggestions nor comments upon what he ate, trying to serve what I found that he liked, and omitting foods which he would be apt to refuse.

At first he improved a great deal in every way, ate better, improved in posture and seemed to be interested in his work and play. Then he went all to pieces again, slumped in his posture, refused to do his work or to carry out any suggestions. I, realizing my failure, advised his parents to discontinue the treatments. Sometime during the following winter, he ran away from

home because he objected to something they had tried to make him do, was lost for two or three days, and died from exposure.

I should be slow about taking a case of that kind again, for, as I said before, I think they should be in an institution where they can be under constant supervision and control.

My next case was of an entirely different nature. A woman of forty-five years of age whose attack followed an almost hopeless condition of influenza pneumonia. The first symptom which was recognized as encephalitis was a condition of profound coma. After three or four days she was given an inoculation of serum which was recommended and used successfully in other cases by Dr. Walter Freeman of St. Elizabeth's Hospital in Washington. Her reaction after this treatment was quite marked, for after having been for days in an unconscious condition being fed by rectum, several hours after the dose she opened her eyes and wanted to know when her breakfast would be ready. This was the end of her coma, but aphasia was marked. She had just taken a Doctor's Degree in Modern Languages and after the attack she lost almost all of her knowledge of French. The memory of this has gradually returned, though in a rather unusual way, she being able to read and understand the language when spoken, but not for months to speak it, though she could write the answers to questions put to her in French.

Her paralysis was of the flaccid type and involved her whole right side. The treatment of this case was the same as for any case of hemiplegia, except that she had to be handled even more carefully to guard against fatigue, for she was extremely nervous and excitable. For three years she has been exercised under water and we have felt that she has worked much better and certainly with much less pain than when treated without the water. I do not feel that the results have been all I had hoped for in this case for although she is able to walk with a crutch she still wears an ankle brace, and her arm and hand muscles have hardly developed at all. Mentally she has recovered but is still very nervous and since she is still slowly improving in the end the results may be good.

My next case was a little colored girl of four years. She was admitted to Children's Hospital first for measles but soon developed encephalitis. During the first stages of her attack of encephalitis, though apparently not paralyzed, she lay on her back without moving any part of her body except her eyes. She was kept in the hospital for two months during which she gradually improved, power coming back in her arms first. At the end of this time she was turned over to the Physiotherapy Department of which I have charge. At that time, though there was no paralysis there was a complete loss of coordination, and extreme mental dullness, not even the ability to answer the most direct questions about her name and home. She would stand on her feet if supported but could not guide her legs at all, throwing them up high in front of her in her efforts to step forward.

We started her treatment with very gentle massage and passive exercises; later as she became stronger mentally and physically we added assistive and active exercises, and later still exercises for coordination. She had to be handled very carefully at first, even a change of physiotherapist would interfere with her work and she would sit motionless, making no protest, but with tears running down her face. From this condition she improved very slowly but gradually until she was able to work in a class with other children. As soon as she had improved enough mentally we began showing her pictures, and she learned to distinguish objects and colors.

Not long ago I had her brought to our orthopedic clinic for examination. The surgeon after reading the history of the case gave her a thorough examination, and told me that he could find nothing wrong with her. She goes to kindergarten and except for the fact that she is retarded one year, she is apparently as normal as any other child in the class.

My next case was one of a young woman of about thirty, of fine intelligence, a college graduate, who had a long standing case of encephalitis coming on with no remembered history of fever or illness preceding her attack. The history of her case as given me by her family was this. She had a rather fatiguing day but was apparently perfectly well. She dressed to go out for dinner and then surprised her family by lying down and going to sleep in her hat and coat. That was the first abnormal symptom, but continuing from that time she slept constantly during the day and apparently stayed awake all night. They began to notice a stiffening of the arms and a general abnormal nervous condition. She was examined by two or three doctors who could make no diagnosis, admitting that they did not understand her condition. About two years after the first symptoms her case was diagnosed as encephalitis and she was given scopolamin. This she continues to take and still reacts very well to it.

About four years ago she developed symptoms of Parkinson's Disease and this has slowly but definitely progressed up to the time when she began her physiotherapy treatment. At this time her condition was this—vibrating head and arms, head bent forward, face expressionless, chest contracted, arms carried in a rigid position, breath irregular and dying out at times; a characteristic walk, small shuffling steps increased at times to a run; difficulty in sitting down and getting up; legs and feet quite rigid. She also had quite frequent attacks of rigidity which she spoke of as "getting stuck."

When approached by the family I refused to treat the case unless I had the permission of her physicians. One said, "Try it; it has not as yet been attempted but might bring good results." The other physician said he did not believe that anything would help her but as he knew me to be careful he thought it safe to let me try.

Even then I was not anxious to undertake the treatment, and if I had seen her before consenting I am afraid I should have refused. But as the patient's heart was set upon my giving her treatments, and her parents also wished it, I consented to try.

I started her treatments with Jacobson's method of relaxation, teaching her first to flex her arm and to concentrate upon the movement until she could localize and sense the contraction of the muscle. I then taught her to concentrate upon the relaxation of the muscles. I followed this method over her hands and arms and feet and ankles. She is most cooperative; so she soon learned that if she could relax from a voluntary contraction she should also be able to relax from an involuntary contraction. She left for the summer after about a month's treatment, but in even that short time she showed signs of improvement, controlling her hands and arms better and learning to relax from the "stuck" position.

I found upon her return four months later that, undirected she had fallen into a mechanical method of doing her exercises, and often failed to complete the relaxation of the muscles. I felt it wiser to change the method of exercise and therefore began giving her that method of relaxation which I had seen so clearly demonstrated in a class under the instruction of Dr. Dennis-ton at the University of Wisconsin.

In this method flexion and extension were not used,

but the muscles were tensed and then relaxed. I have used this treatment until two months ago, since then I have been able to obtain complete voluntary relaxation of the whole body; and I am now giving her quiet voluntary movements from the completely relaxed condition.

I have not given her massage but have sometimes stroked gently over muscles when she was finding it difficult to relax them.

I always start the treatment with exercises in bed, going over her body until she is quiet and relaxed, then give her standing and walking exercises in front of a mirror. She practices sitting down and getting up from a chair; she does the corner exercise to stretch her pectoral muscles, and I stretch them also by forcing her elbows backward from the upright flexed position.

After seven months her whole posture has improved, she walks with a normal step, not only during her exercises but on the street; where she used to take twelve steps to turn around she now takes three; the vibration and stiffness have completely left her left hand, the right hand vibrates slightly, but not enough to make her conscious of it. The vibration in her head is greatly diminished and she holds it fairly well up in walking; her chest is in better position; and except for some remaining rigidity her walking is almost natural. Her facial expression has improved though it is not quite normal yet. She gets up and sits down with less difficulty. She has not been "stuck" for months, though she still has to struggle against a tendency to stiffness in the right arm when she is interested or excited.

Last winter, at my suggestion, a specialist in speech was brought in to work with her, and she has improved in her speech, though she is still troubled at times with the dying away of her breath when talking. She leads a normal life, attending lectures and theaters, going to luncheons and dinners with her friends, playing cards, and taking part generally in her home life.

I am working now on her arms, shoulders, head and giving her breathing exercises. She can for a few seconds voluntarily control the vibration of her head, and we hope that gradually she will obtain control of this as she has of other parts of her body.

The work with her has been most interesting to me, I have had wonderful cooperation both from the patient and the parents and I was told a few days ago that they were greatly pleased with her improvement. Her physician thinks that the disease is checked. If this proves to be true, it seems as if in another winter of work she should be practically a well woman.

The only other case upon which we have been able to work long enough to be able to judge of results is a boy of seven who was treated in Children's Hospital clinic for Post-vaccinal Encephalitis and was completely paralyzed from just below the ribs back and front of the body, had complete loss of motion and sensation. After some weeks of massage and exercise, he now, after eight months of his attack, has some slight return of both sensation and motion. It is too early to really decide what the result will be, but we are encouraged by the orthopedic surgeon in charge of the case, to continue with the treatment; he expressing his belief that there will be enough return of muscular power to enable the patient with the use of braces and crutches, to get up on his feet.

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Correcting

By Ruth E. Winch

Read before the 1931 Convention of the International Society for Crippled Children

Since 1916, there have stood on Ohio's statute books laws to provide special treatment and education for deformed and crippled children. Earlier this evening, we have heard of the national program for FINDING the child who is in need of this service, and we are fortunate indeed to be able to say that Ohio's laws providing for the education and physical correction of the crippled child are in line with the best thought of our time.

We have gone a long way from the attitude prevailing in the dawn of our civilization, when cripples were destroyed in infancy because they were non-producers. Modern remedial surgery has brought us a long way, too, from the state of things in which the cripple, while tolerated, was treated in a manner which inevitably gave him a warped personality and an embittered spirit. Not only can corrective surgery give physical relief, it can and does correct at the same time a spiritual handicap, and prevent an inferiority complex.

The Ohio Society for Crippled Children and The International Society, whose achievements and aspirations we celebrate this week, have carried the burden of the constant battle for legislation to benefit these underprivileged children, the fruits of which we enjoy to-day.

The Ohio plan for the care, treatment, education, and rehabilitation of crippled children assures care of all children who for reasons of congenital or acquired defects of development, disease, or trauma, are deficient in the use of body or limbs. Any indigent, crippled child can be brought to the attention of a court, who may commit that child to the State for orthopaedic care, the cost of this care being charged back to the county of which that child is a resident.

In meeting the need which this law was intended to fill, last year (1930) Cuyahoga County expended $63,000; and other agencies spent an even larger amount in correcting the crippled child. There has ever been in this County the finest kind of cooperation between the public and private health agencies, the medical profession, as well as service clubs,—for there is no appeal as universal or as affecting as that of the handicapped child.

In addition to this, there has been further legislation enacted, dealing more concretely with the education of the crippled child; the establishment of special schools, transportation and education continuing even after the expiration of the legal school requirement. The Federal Rehabilitation bill, with its appropriation matched by the states, gives adequate legislative power to our local communities to meet every need within its scope. Upon this legislation, the Cleveland School system has built up complete educational facilities for the handicapped, accompanying this with social service of the highest type.

Physiotherapy and Occupational Therapy from the first day's attendance at Cleveland's Sunbeam School strive to achieve early physical rehabilitation. Sunbeam, especially planned for the peculiar needs of the handicapped child, with its adequate transportation facilities, gives assurance that the child of school age is on the road to the education he so sorely needs. Vocational courses and guidance are there also offered to the maturing child through workers versed in the special needs of the handicapped.

Having accepted the fact that, through our laws, which make mandatory an annual registration of all handicapped children, either in or excluded from school, and having accepted as substantially true the fact that in the large centers of population such as Cleveland we are offering adequate examination and remedial treatment of these handicaps, we still have before us the challenge of CORRECTING in so far as it is humanly possible. What do we mean by CORRECTING? If normalcy is our goal, how closely can we approximate it?

We realize that the crippled individual must adapt himself to an industrial world in which he bears a heavier burden than his fellows. He can scarcely evade this burden, for the modern world accepts almost as axiomatic the theory that through work alone can self-expression and enduring satisfaction be found. Idleness is corrosive, work is needed for restorative as well as for economic reasons. Doctor Richard Cabot has summed this up in his book "What Men Live By," as "work, play, love, and worship," with "work" his "favorite prescription."

We must therefore give the crippled child better than the average education and vocational opportunities. We must fit him unusually well for future life, for this is but simple justice, but how are we to do it? For the child of average or above the average mental capacity, there are special schools with smaller classes and hence more highly individual instruction, coupled with the best physical and mechanical aids to instruction, which begin early this special preparation for an efficient life. Then the child's special aptitudes are sought out so that he may be given the wisest possible steering, and finally he stands adolescent at the gateway of his life work.

Up to that time he may have scarcely thought of himself as unusual and set apart, so successfully has the school done its work, but when the adolescent seeks to find his place in the modern industrial world, he quickly learns that he is one set apart, although he is eager to enter the work-a-day world, seeking no favors. His efforts for placement meet with the most discouraging rebuffs, owing to a fear on the part of the possible employer that he cannot do the task as well as a more normal individual or that sympathy rather than efficiency will be the controlling factor. How then can he prove that he can function without

the need of special hours, special tasks, or reduced responsibility? Only by having a job can he demonstrate his value, but how is he to get his first job? Sometimes his family, friends, or personal good fortune give him an opening. Often the social service worker in his school accomplishes this. But failing all these, it becomes a responsibility of the social agency in whom this task is vested.

By what means is it then accomplished? In Cleveland, The Association for the Crippled and Disabled has very definitely as one of its services that of placement and uses as observation and training centers its own sheltered workshop for needle trades and its own office for clerical work. The sewing shop was organized originally to prepare young women to go from it into garment factories wherever their disabilities made this feasible. As this can be only a small shop of some 20 to 30 workers, the more of its numbers who can be prepared for and placed in normal industries, the larger can be the group it serves each year.

In preparation for office placement, a short experience on a telephone exchange, filing, typing, and stenographic work under the observation of the social worker enables her to speak with conviction and persuasion to a possible employer. The past year's experience in this venture has persuaded our organization of its value, for in spite of the terrific business depression, we have been able to make placements which have lasted and have been highly successful.

John S—badly afflicted since early childhood with poliomyelitis, had completed high school with good grades and had had a further course in a business school. At the end of two years of constant search for employment, he was referred to The Association for the Crippled and Disabled for placement. Everywhere the answer to the earch for a job was "Just what can he do? He looks very frail, he uses crutches, and we are afraid that he cannot hold out. We would dislike to dismiss him if he were unable to do the work," etc. In our office his work began on the switchboard, familiarizing himself thereby with our problems and those of kindred agencies. After six months' supervised experience, we could safely answer the questions, "What can he do? Can he hold up physically?" by a concrete listing of the things he had done, and could add from first-hand experience the fact that he accepts responsibility, he works well with others, and all the things which show that he has no personality handicap involved with the physical one. He was absent because of illness only two half days in six months! With this information first-hand and indisputable, we placed him in a position where he is giving excellent service.

Anna M—age 19, also badly crippled after poliomyelitis, found it impossible to secure employment for a year after completing her high school and business course. She, too, began service on the telephone exchange and from there progressed to stenographic work. Gifted intellectually and emotionally as she was, it was a fairly easy task to persuade a potential employer that she was a better-than-the-average risk.

Grace M— has had a deformed foot with some atrophy of the ankle and lower limb from birth. With great sacrifice, her family had given her a college education. She definitely prepared for teaching, and it was not until after graduation from college that she found herself up against a solid wall of prejudice against the employment of a handicapped person as a teacher. When this fact was at last regretfully accepted, a search for another task was begun, in which she could use her interest in and skill in dealing with young people. She has this winter through our placement service found such an opportunity with a splendid future.

And so I might continue stressing by concrete illustration after illustration the need for skillful, thorough placement service as an outstanding means for CORRECTING, with the case-work approach to the guidance and placement of the young handicapped worker in attempting a solution of the problem. A Cleveland committee, consisting of representatives of agencies dealing with the handicapped, with the outstanding help of the local Rotary Club, is pushing at present the establishment of a division for the handicapped in connection with the local State City Employment Bureau. It is vital that, once the definite aptitudes and skills of the cripple are ascertained, a reservoir of jobs such as a large employment bureau builds up, be available to widen the opportunity for well chosen placement.

Still other aids to CORRECTION are found in sheltered workshops. In Cleveland, the Goodwill Industries offers some employment of this nature, as does the Association for the Crippled and Disabled in its Sunbeam Workshop. Here are to be found, working side by side, the young cardiac, the poliomyelitis victim, the congenital cripple, the sufferer from accident or bone tuberculosis, or, possibly, osteomyelitis. The ideal is always ultimate employment in normal industry.

Vocational tryouts determine whether or not this is advisable. Where the disability is a progressive one, normal adjustment may be arrived at only temporarily, if at all, as was the situation with Anna J. She had been a successful housemaid before meeting with an accident which resulted in the amputation of one limb above the knee. Her reduced vitality made impossible a return to this work. She entered the shelterd workroom for a training in sewing accompanied by medical supervision and help in her adjustment to an artificial appliance. After a few months' tryout, she chose to return to a housework position, with limited responsibility though with greatly reduced earnings, as it was difficult for her to make the daily trip to the shop, and sewing had made her very nervous. Later developments have shown a reason for her inertia and lack of response to this training, in the fact that her tuberculosis is again active, a reamputation of her limb is necessary, and there is even a possibility that her other knee is affected. After long hospitalization, she will again need vocational tryouts to determine a possible capacity for work.

Other girls have found the sheltered workshop a boon indeed as it has made it possible for them to take time from their work to keep dispensary appointments, and when they must return for hospitalization they know their jobs will be kept open for them.

Another outstanding aid is to be found in the Federal-State Rehabilitation Service. Every adolescent, disabled through accident, illness or congenital disability, is eligible for referal. Originally, the act instituting this service read for the "rehabilitation of those injured in industry" but it later was changed to cover the entire group suffering physical disabilities which constitute vocational handicaps. Vocational rehabilitation was provided by the Federal Congress and funds appropriated for the purpose of stimulating this work among the states of the country. It provided for the expenditure of $1,000,000 to be matched by appropriations by the states, to be used for the training of handicapped persons for the purpose of their

entry into gainful employment. The State of Ohio accepted the provisions of the Federal Act in 1920.

In the study of employment possibility and susceptibility to education, physicians, employment and factory managers, and often a psychiatrist, are used. Numerous applicants are found who physically or mentally are not susceptible of profiting by this service. For those found feasible for training, programs are varied and individually adapted according to the needs of the client, using all established institutions, commercial schools, trade schools, in some instances correspondence training under supervision, private and tutorial types of training, apprenticeships or placement training. A job objective is always set up in starting training programs. The enabling law for this service specified close cooperation with the Industrial Commission of the State, hence injured workmen suffering permanent injuries are referred immediately for rehabilitation.

In 1930, the Cleveland branch of this service had 163 referals,—133 men and 30 women. Of this number, 89 were disabled through industrial accidents, 12 public accidents, 47 disease and 15 congenital. Of this number, 53 were between the ages of 16 and 20, 54 between 20 and 30. It is on this age group that the interest of this convention primarily centers. It is interesting to note that over 50 per cent of these clients had received some relief from charitable organizations. Last year, 84 clients were rehabilitated and sent into employment. The sum of $29,263 was spent for tuition and supplies, but the increased earning power of the rehabilitants in a future of productivity instead of dependency is conservatively estimated at ten times this amount. The economic value of this service to the community is self evident. Its value to the individual cannot be expressed in words or in bare statistics as to placements.

Over and above the existing aids to correction, developments in hydro-gymnastics offer wide possibilities for the future. Therapeutic pools are being used successfully in Los Angeles, Detroit and other centers where work for the handicapped is outstanding, in flaccid and spastic paralysis and in post-operative procedure following tendon transplantation and plastic joint surgery and especially in treating the disabilities resulting from poliomyelitis. Re-education of the muscles under water, without the dangers of weight bearing, is aided and the hydropathic effect on the circulation and the nerves is of value, while the maximum degree of enjoyment and interest is obtained. Cleveland is definitely seeking the establishment of such a pool.

A convalescent hospital, as a half way stage between the institution and the home to which the child returns is a matter which has already commanded the serious attention of the local Rotary organization.

A Chronic Hospital for the adult handicapped is beginning to rise this month in connection with our County Welfare buildings at Warrensville, and a special wing for young chronically disabled patients is being urged as a part of this hospital.

Physical disability may be only the outward manifestation of distortion of the child's inner life. The normal child demands activity and free association with his fellows. Denied these, character becomes warped.

The best possible correction lies in prevention, and in this field it would seem that there has been less progress than in the fields of orthopaedic surgery and physiotherapy. More progress has been made in the detection, treatment and education of the crippled child than in searching out and in forestalling underlying causes. Public Health statistics show that the chief causes of crippling come under the main heads of:

1. Congenital defects and birth injuries.
2. Acute infectious diseases affecting primarily the neuro-muscular system.
3. Chronic infectious disease, such as tuberculosis.
4. Accidents with traumatic injuries.

Studies in race betterment should shed a ray of light in the existing darkness as to the causes for congenital defects. Research in obstetrics is doing and may do much more in revealing birth causes for injuries.

Of the acute infectious diseases damaging the cerebro spinal system, anterior poliomyelitis takes first place. During the past year Ohio and several other states have seen a recrudescence of this scourge. There is indicated less serious crippling now than has been the case in former epidemics, as we know better now how to treat the disease and to restore lost function.

While the actual causes of poliomyelitis remain in doubt, progress has been made in the detection of symptoms, the early use of convalescent serum and in rational after-treatment. If this disease can be prevented or controlled during the coming years, one of the greatest enemies of child life will have been conquered.

Tuberculosis—a major cause of disablement—has decreased within the past decade, due to better protection of milk supply, earlier diagnoses and more rational treatment. Public health work is providing continued vigilance and commands our gratitude for the gains it has made and demands our constant support for the still greater contributions it can make.

There is grave danger however that during a period of intense economic depression, standards of prevention may become lax. Adequate relief for the unemployed and other large groups in need of life's basic necessities has a major place in a program of prevention and CORRECTION.

Gatherings such as this give us renewed ideals as well as practical tools with which we may serve these ill-conditioned lives on the basis of our highest intelligence.

Cleveland, Ohio.

Cooperation the Keynote

By Edith Monro

Address given at the Tenth Annual Convention, Philadelphia, Pa.*

In the name of the Executive Committee I have a little word of greeting for you. As it is not my privilege nor my function as Chairman to enter into any of these discussions, I would like to bring before you at this time the greeting of the Executive Board of this Association.

In carrying on the business of The American Physiotherapy Association, this Committee has to function as the voice and opinion of the nationwide movement for the betterment of physiotherapy, and I want to bring it very closely home to you that we are organized in the interests of our work. We must remember that it is our life work. Many of us are giving our whole lives to it, and therefore our whole interest lies in it. We must also remember that we get out of any association what we put into it. Therefore, how much more should we put into it, when the Association represents our life work and our life interest! We must put every bit into it that we can! We cannot afford to sit back and think the next person is the one to do a certain thing, thinking "I am only so many years in the Association, or only intend to be in it for so many years." When we are working for our Association, we must put every effort we can into the work and contribute as much as possible in the interests of physiotherapy.

I think I urged you last night to always feel free to offer your opinions in Association matters. It is much better to speak out and discuss things freely than it is to be reticent and troubled afterwards when something comes up that you did not know about, or did not agree with. How are we to get ahead if we do not have your criticisms, your help and your advice? Give us your opinions; that is what we are here for. The Executive Committee has entrusted to its care the reputation of a new profession, the function or the existence of which we regret to say even some members of the medical profession are not wholly cognizant. We run against this difficulty very often. We are responsible to the medical profession and to the general public for the recommendation of well trained, intelligent workers in physiotherapy.

The Committee also acts as the clearing house for all inquiries, all suggestions—constructive and destructive in character, and makes all contacts with the outside. Therefore, I hope you will take it upon yourselves now to think whether in your contact and your support of the Executive Committee you are doing all you can to bring the interests of your locality to the Executive Committee for discussion and for any consideration at all. Just think of that. We have to function for you; we are separated from you, and we depend on you to bring all your problems forward in order that they may be satisfactorily disposed of for the good of physiotherapy as a whole.

In a way the Executive Committee is the central nervous system of the organization, refreshed and sustained by the vital living organ, our official publication, better known as the Physiotherapy Review. The Physiotherapy Review is in fact more than one organ because it functions as many; it sees, thinks, hears and acts for us. It goes about through our organization; it circulates among us; it gathers material from among us, and it is the PHYSIOTHERAPY REVIEW that is our representative in print, we will say. It is the part of us that meets the public and conveys to the public our purpose, our standards and all that we stand for.

A professional interest is never one that may be indulged in merely to please the whim or fancy of the individual person. We naturally have our own individual interests in it, but we are public servants as well because we have a public interest entrusted to us and in us.

Nothing can grow that is continually being torn down and never being rebuilt. If we want to tear down something that is not right, we must have ready as we tear down something with which to rebuild. The foundation must be laid right. If we tear down some old rule or convention, we must have something ready to put into its place immediately otherwise we have no sure foundation; we have nothing to build on. There are a good many people who think there is no growth unless the things that are unsatisfactorily functioning are torn down at once, although they have no substitutes to offer in their place. That is not true progress, especially when it pertains to any profession that is so closely allied as we are with the medical profession. Things change so rapidly in the medical profession today, that no one in it can stand still, and we cannot stand still either. As someone said, in the medical profession you have to keep running as fast as you can just to stand still. We are growing, and as we grow we have to discard certain things and substitute others to meet our new conditions; but we cannot discard until we have a substitute ready.

Remember also that as physiotherapy is growing, each one of us in our individual work must grow to keep pace with it. You and I may work in our profession for twenty-five years longer, but it will endure long after we have passed on. We are not building for ourselves merely; we are building for the future. We are laying the foundations for something that is going on twenty-five, fifty, seventy-five, one hundred and even two hundred years from now. We are responsible for what the Association will be two hundred years from now; that is a responsibility that has been entrusted to us as organizers of this Association. We have here in this room many of those who

*Stenographer's report of extemporaneous talk.

were charter members of the Association, and we are just in the making. As we look back ten years, and think of what has happened in those ten years, it does not really seem a week ago that we first met. If those ten years seem such a short span of time to us, think how soon one hundred years will be here. When they come, we must be sure we have prepared well for them, and the only way we can be sure is to handle the different situations as they arise today to the best of our ability, keeping in mind our future development.

Therefore, in our educational problems and membership problems, I hope you will bear in mind that we are building for the future and not for just what is at hand today. We must take care of what is going on now, but we must do it and build for the future as well.

We who have this professional responsibility must also think of those who are not as closely associated with practices that protect them as we are. There are a great many of our membership body who are practicing in a private way. They are responsible to themselves for what they do. Therefore, they come up against legislative procedures which some of us are not bothered about. However, even so we must be ready to protect those who are with us and who need that protection, and we must do all we can to better conditions for them.

We must also look out for those who are coming new into the profession. We who have been in it five, ten or possibly fifteen years feel very confident about some of the things we are doing, but we must remember that there are younger people who are starting out who have not that confidence, and we must stand ready to give them the help that we did not have. Just because we did not have it is no excuse or reason they should not have it, and we must be ready to extend that help. The way conditions are today, it is necessary for us to give that help or they will drift away from us. We all know the different conditions obtaining over the country; how many there are who are not practicing physiotherapy in a proper way. Therefore, we have to urge our standards upon these newcomers and see that they are in the right channel when they start out.

Our Association is held together by 17 Chapters. Of course, we are very grateful for the support of those Chapters, but we must never fail to realize the support that the membership at large can give us. They are just as responsible to the Executive Committee for their end of the Association as are the Chapters. So I appeal to the whole membership body to stand ready to cooperate with the Executive Committee in making this Association a success.

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EDITORIALS

Message of Welcome to the American Physiotherapy Association Tenth Annual Convention, Philadelphia, Pa., June, 1931

We are gathered together to celebrate an occasion to which we have all looked forward in pleasant anticipation of seeing old and new faces; of giving and taking, in the exchange of professional experiences.

Some have made a sacrifice of time to get here; others are making it a part of a summer holiday; but in whatever capacity we come, we have in common the earnest desire to make this convention the best of all. This is not to cast any reflection on the other nine, but is merely an affirmation of the inevitable growth of ten years.

Since the Chairman is not privileged to take part in business discussions, I take this opportunity of extending to you a message from the Executive Committee.

In carrying on the business of the Association this committee has to function as the voice and opinion of this nation-wide movement for the betterment of physiotherapy.

It has, intrusted to its care, the reputation of a new profession, of the existence of which, we regret to say, even some of the members of the medical profession are not wholly cognizant.

It is responsible to the medical profession and to the general public for the recommendation of well-trained, intelligent workers in physiotherapy.

This committee also acts as the clearing house for all inquiries, all suggestions, constructive and destructive in character, and to make all contacts with the outside.

In a way, it is the central nervous system of the organization, refreshed and sustained by the vital, life-giving organ, our official publication, better known as THE PHYSIOTHERAPY REVIEW.

THE PHYSIOTHERAPY REVIEW is, in fact, more than one organ. It functions as many in that it sees, hears, thinks, and speaks for the Association.

It circulates among us, gathering material as it goes and for its life-giving quality it depends upon each and every member.

A professional interest is never one that may be indulged in merely to please the whim or fancy of the individual. It is a public interest intrusted to the care of all those who have pledged themselves to carry on a given piece of work.

Nothing can grow that is continually being torn down and not rebuilt. This is to recommend that all those who are anxious to tear down the walls of an old conventionality should stand ready with fresh material to rebuild them stronger than ever, on a firm foundation. There are those, also, who do not believe in building the new at all. The old foundations appear to be good to the casual observer and to all intent and purposes will last as long as the life of those for the time being concerned. In this there is no growth, no vision, no interest but a personal one.

We who have this professional responsibility must contribute to The American Physiotherapy Association an unbiased interest and learn to build for the whole rather than for the small group or the still smaller Self. Those who are safely launched upon a career must bend their energies to making the passage safe for others who are just about to begin; those who are secure in the protection which association with private medical practice or the institutional position gives must stand ready to fight for the legal protection of those who are courageous enough to start on a career alone.

Our Association is held together by seventeen active chapters which are organized to bring physiotherapists who work in various localities in closer touch; yet scattered throughout the nation we have a strong, loyal membership of individuals who have the opportunity of contributing just as generously as do the groups.

The Executive Committee can only function as it receives the impulses of the Association through the channels of its membership, so we greet you with the hope of your earnest co-operation in solving the problems which confront us at this convention.

EDITH MONRO.

Report of the Tenth Annual Convention, June 8-11, 1931, Philadelphia, Pa.

The tenth annual convention of the American Physiotherapy Association held in Philadelphia in June was a most profitable and pleasant occasion, as all those who were fortunate enough to be there will testify.

To the Pennsylvania Chapter, the hostess, the association offers its heartfelt appreciation of their hospitality and also of the splendid piece of work in their arrangement for our entertainment. They are to be congratulated upon the executive ability invested in their group.

Following is a list of the chapters represented, together with the number of their members present:

Cleveland, 3; Chicago, 3; Minnesota, 1; New York, 9; Northern California, 1; Southern California, 1; Wisconsin, 3; District of Columbia, 4; Massachusetts, 7; Michigan, 7; Pennsylvania, 38; Western New York, 3. Members-at-Large represented Louisiana, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, and Virginia. There was a total registration of 117, including two guests from Canada.

The convention opened with the usual informal tea on Monday afternoon, which gave the opportunity for getting acquainted and for official registration for the business sessions.

The first formal meeting was held on Monday evening with an address of welcome from Dr. Krusen of Philadelphia, followed by very interesting papers from three of our members.

The business sessions that were held on the three following mornings comprised the discussion of subjects vital to the functioning of the association. These are set forth in the following paragraphs.

MEMBERSHIP

Delegates were asked to carry back to their respective chapters an explanation of the distinction between junior and senior membership.

Junior membership is open only to the recent graduates of approved schools and courses of training, but who have not had the one year's experience required of senior members.

This is offered for the encouragement of those who are just coming into the field of work.

At the end of their first year of practice, and not later than two years after graduation, they are compelled to transfer this junior membership to senior membership or else be dropped from the association.

A special form for re-application for senior membership is prepared for such use and should be in the hands of the membership chairman of each chapter. This application calls for the references in regard to the required experience and is an entirely different blank than the one used for regular, active membership.

For explanation in regard to dues and privileges offered to junior members, see By-Laws, Article II—Membership, Section 2, c., and Article III—Dues, Section 3. In the Constitution and By-Laws, the term "active member" is understood to mean the same as senior member.

The question of citizenship in the United States of America as a requirement for association membership was discussed. This does not apply to members of foreign societies already having reciprocal membership with this association.

The motion was made and carried—"That the Chairman of Membership investigate this question of accepting non-citizens of the United States of America as members of this association, and to report back to the Executive Committee for final decision."

BUREAU OF APPOINTMENTS

The question arose of whether or not a prospective junior member whose application for membership is pending acceptance could be automatically given the services of the Bureau of Appointments?

The motion was made and carried "That when a prospective junior member sends in her credentials she be automatically given the services of the Bureau of Appointments."

As a result of a discussion in regard to the financing of the Bureau of Appointments, the following motion was made and carried, "That an amendment be prepared to come before the next convention to the effect that the Bureau of Appointments adopt the plan whereby they will charge a registration fee."

EDUCATION

A general discussion was held in regard to the proposed curriculum of the association and its reception in the teaching field, and in regard to the list of approved schools.

The Chairman of the Committee on Education presented the problem of the number of hours of anatomy required. Those in the teaching field feel that 300 hours is impractical for the length of time allotted to the whole course and suggest a redistribution of these hours to include the anatomy taken in the prerequisite course.

A motion was made and carried "That the Executive Committee be given the power to hold to the present curriculum and to investigate the possibility for the re-distribution or revision of the curriculum to be presented to the convention next year."

A motion was also made and carried "That the Executive Committee prepare an amendment to the By-Laws, to be known as Article II—Membership, Section 5, to define what an approved course in physiotherapy is, what an approved school of physiotherapy is, what an approved school of physical education is, what an approved school of nursing is."

A motion was also made and carried "That the list of schools whose curricula have been submitted for approval with the agreement to fulfill the requirements of the Committee on Education of the American Physiotherapy Association be printed."

LEGISLATION

The Committee on Legislation did not advise the association to undertake any discussion of legislation until further investigation has been made.

At the close of the business on Thursday morning, a Round Table, led by Miss Beard of Chicago, gave the opportunity for the discussion and presentation of many professional problems of interest to our members. Some of the papers read at the meeting will appear from time to time in the REVIEW.

Last, but no means the least, was the closing dinner

meeting on Thursday evening, introduced by a very clever and amusing skit written and presented by Miss McMillan of Boston, assisted by Mrs. Batten and Mrs. Shields.

The dinner hour was graced by humorous speeches from here and there, brought out by the wit of our toastmaster, Dr. Coulter, of Chicago. Our ever-ready friend, Dr. Corbusiere, of Plainfield, N. J., made a most heroic response to an appeal to fill the vacancy made by the absence of Dr. Wilcox, and after writing busily during dinner, gave a delightful postscript to the whole.

We came away bearing the attractive souvenirs given by the hostess chapter, and the pleasant memory of the inspiration and friendliness of this, our Tenth Annual Convention.

N. B. As we cannot meet in New Orleans next year, the Executive Committee ask some chapter to offer its hospitality. May we hear from you?

Pennsylvania is honorably discharged from this duty!

Report of the Executive Committee, June, 1930, to June, 1931

The close of the Ninth Annual Convention, held in Detroit in June, 1930, began the tenth year of business for The American Physiotherapy Association under a new Executive Committee.

The changing of the administration from West to East, with the moving of files and the scattering of members that summer brings, somewhat delayed the progress of business.

As soon as possible, steps were taken to incorporate the association and trademark our insignia to protect our present name.

Through the prompt response of the Incorporating Committee headed by Miss Charlotte Morrison of Chicago, the business was well under way early in August; the trademarking becoming a reality sometime later.

The first full meeting of the Executive Committee was held in Boston in September. New appointments were made to fill vacancies in standing committees. Recommendation was sent out to all the chapters to the effect that a more careful consideration of the qualifications for membership would be necessary to better standardize the general membership of the association through its local groups. Tentative plans were discussed for the present convention and Miss Emily Griffin of Montclair, N. J., was appointed chairman of the Program Committee.

Later the Pennsylvania Chapter formed a local committee for the convention with Miss Blanche B. Sinn of Philadelphia as chairman.

It is to the careful planning and co-operation of these two chairmen that we owe all that these next four days hold in store for us.

For the Standard Records Contest, Miss Helen Kaiser of Cleveland was appointed chairman to hold office until the close of the contest at the 1932 Convention.

At the December meeting of the Executive Committee, held in New Jersey, the applications of several training schools were discussed and of these the Beth Israel Hospital of Newark, N. J., was formally accepted.

From this discussion of schools there arose the question of the number of hours of anatomy required of the curriculum proposed by the Council of Physical Therapy of the American Medical Association and the Committee on Education of The American Physiotherapy Association. The teaching field has many good suggestions for a re-distribution of these hours in a more practical curriculum for graduate students. A meeting with the Advisory Council, held in Boston in January, confirmed the general opinion that some such change would be necessary.

We will hear later from the Committee on Education just what plans have been laid for our discussion.

Through the winter many new members have been admitted until now we have a total of six hundred and eighty-seven, including associate and honorary members.

There have been reports from time to time from the various chapters that the states in which they are located are becoming more strict in matters of legislation not to be overlooked by this association.

The business of the March meeting, held in Boston, embraced the planning of the final program of the convention and the further discussion of training schools. Two schools accepted as approved were, University of Iowa, Iowa City, Iowa, and Course No. 445, Harvard Medical School, Boston.

The last meeting of the fiscal year, held in Philadelphia, just previous to this convention was devoted to the miscellaneous business pertaining to membership, and individual discussions with the chairmen of standing committees.

Also a most important item of this meeting was the official acceptance of a newly formed chapter to be known as the Western New York Chapter of the American Physiotherapy Association recently formed by members in Rochester, Buffalo, Niagara Falls, and other places in that part of the state. President, Miss Ida Rapin; Vice-President, Miss Margaret Davis, who also serves as treasurer, and Secretary, Miss Earnscliffe Musgrove. The committee extends its congratulations to this new chapter.

This brings us to the business at hand which is to:

Strengthen and support our present standards for membership in order that the purpose for which we exist may show through our membership body, to

Furnish the teaching field with suggestions for the best practical methods of physiotherapy training, to

Protect our profession as much as possible by legal measures in so far as we are not required to lower our present standards.

Respectfully submitted,

EDITH MONRO, Chairman, Executive Committee.

June 9, 1931.

Report of the Secretary June, 1931

The Executive Committee held four regular meetings during the year 1930-1931—in Boston in September; in Montclair, N. J., in December; in Boston in March; and in Philadelphia in June. Additional business has been taken care of by mail.

The following business has been transacted at these meetings:

I. The Advisory Committee was invited to serve. It consists of Dr. Elliot G. Brackett, Dr. Arthur T. Legg, Dr. Ernest M. Daland.

II. Appointments were made to various standing committees, as follows: Education Committee, Lorraine Fritz; Publicity Committee, Charlotte Morrison; Committee on Standards, Helen Kaiser; Membership

Committee, Pauline Mansfield. (It was voted to keep this chairmanship within the Executive Committee.)

III. Schools approved by the committee: Newark Beth Israel Hospital, Newark, N. J.; University of Iowa, Iowa City, Iowa.

IV. New chapter accepted: Western New York Chapter.

V. Membership: Total, 676; Senior, 611; Junior, 41; Associate, 16; Honorary, 8; increase over 1930, 161.

Respectfully submitted,
CONSTANCE K. GREENE, Secretary.

Treasurer's Report—1931

I am pleased to report that the membership of the American Physiotherapy Association has continued to show an increase over previous years.

We now have a total membership of 676, distributed as follows: Senior, 611; Junior, 41; Associate, 16; Honorary, 8.

This shows an increase of 161 over 1930. Of that number 35 have paid dues for the coming year. 11 are new members since the close of the fiscal year ending April 30, 1931.

The revenue from the REVIEW has also shown a substantial increase.

We have received a total of $387.00 more from dues this year than last. This increase is distributed as follows: Senior, $373.50; Junior, $10.00; Associate, $3.50.

The income from the subscription and sale of extra copies of the REVIEW also show a gain of $135.84 over last year. Advertising alone showed a gain of $2.33.

These comparative figures are taken from the audits as of April 30, 1930, and April 30, 1931.

The May report shows $129.85 received and $70.93 disbursed, leaving a balance on hand, May 30, 1931, of $1,384.92.

The cost of the REVIEW was $311.69 less than for 1930, and I think you will all agree with me that the standard of the magazine has been improved rather than reduced.

May I thank all of the treasurers of the chapters and the individual members who have cooperated so well in the difficult work of collecting dues promptly.

Respectfully submitted,
MABEL E. HOLTON.

Audit Report, April 30, 1931

May 19, 1931.

American Physiotherapy Association,
Ann Arbor, Michigan.

Ladies:

We have audited the Treasurer's accounts of the American Physiotherapy Association for the year May 1, 1930, to April 30, 1931.

During the year the books and records were transferred from Oakland, California, to Ann Arbor, Michigan. The checking account with the American Trust Company of Oakland, California, was closed out and the balance was transferred to the Ann Arbor Savings Bank of Ann Arbor, Michigan. The balance in savings account No. 3177 with the American Trust Company of Oakland, California, was transferred to savings account No. 6261 with the Ann Arbor Savings Bank of Ann Arbor, Michigan.

The balance of $1,925.81 on May 1, 1930 as shown by the Cash Receipts and Disbursements Statement differs from the balance of $1,935.81 on April 30, 1930, according to the audit report of that date by $10.00. This was the result of check No 87 to Frieda Gasson of $10.00 being ignored. The check was issued on November 16, 1929, for legislative committee expense but was not paid by the bank until July 22, 1930. It was therefore outstanding on April 30, 1930, and should have been treated as a cash disbursement.

All receipts reported with the exception of the balance in the revolving fund kept by the Business Manager, were deposited in the banks; and all disbursements made by the Treasurer were properly authorized. It is suggested that all receipts including those of the Business Manager be sent to the Treasurer and that a petty cash fund be established to replace the present revolving fund.

The bank balances were verified by confirmations from the bank.

Very truly yours,
Paton and Ross, F. E. ROSS.

Cash Receipts and Disbursements Statement, May 1, 1930, to April 30, 1931

Receipts:		
Membership Dues:		
Senior Members	$2,995.50	
Junior Members	114.00	
Associate Members	25.50	$3,135.00
Association REVIEW		
Subscriptions	$ 283.50	
Sales and Extra Copies	65.29	
Advertising	197.48	546.27
Gifts		6.00
Interest on Savings Account		21.89
Miscellaneous—Revolving Fund		34.47
Total Receipts		$3,743.63
Disbursements:		
Advertising	$ 35.70	
Auditing	50.00	
Bureau of Appointments	90.00	
Convention:		
Expense	$ 367.10	
Traveling	450.00	817.10
Copyright Sketch		10.00
Executive Committee Traveling		262.51
Express and Shipping		36.20
Incorporating		150.00
Miscellaneous Supplies and Expense		32.67
Office Expense, Postage and Telephone		213.82
Printing:		
Miscellaneous	$ 174.97	
REVIEW	1,714.66	1,889.63
Refunds:		
Membership Dues:		
Senior	$ 12.00	
Junior	2.00	
Associate	4.00	18.00
Subscriptions—REVIEW		2.50
Trademarking Insignia		175.00
Treasurer's Bond		5.00
Typewriter		48.60
Total Disbursements		3,836.73
Excess of Disbursements over Receipts		$ 93.10
Balance Audit Report, April 30, 1930	$1,935.81	
Less: Check Omitted from Report	10.00	1,925.81
Balance, April 30, 1931		$1,832.71

Bank Reconciliations and Cash Balance, April 30, 1931

Ann Arbor Savings Bank—Commercial Account		
Balance per Bank Statement, April 30, 1931	$1,309.02	
Balance per Books, April 30, 1931		$1,309.02
Ann Arbor Savings Bank—Savings Account No. 6261		
Balance per Bank Book, April 30, 1931	$ 521.89	
Balance per Books, April 30, 1931		521.89
Revolving Fund		
Revolving Fund Balance, April 30, 1931		1.80
Total Cash Balance, April 30, 1931		$1,832.71

Annual Report of Bureau of Appointments, June, 1930-June, 1931

Madam President, Members, Friends:

Again I must express my regret in not being able to deliver this report in person, but hope it will help to show that the Bureau has been functioning quietly and faithfully during the past year.

At the beginning of 1931, letters were sent to all chapters asking how many had local registries, and requesting a monthly report be sent to the director, beginning as of May 1st, 1931. This brought a very satisfactory result, and out of 16 chapters, 5—including Chicago, Minnesota, New York, Massachusetts, and New Jersey—report having registries; while 8—including Oregon, Wisconsin, District of Columbia, Pennsylvania, Washington, Michigan and Texas—report no registries. Rhode Island and Northern and Southern California Chapters are still to be heard from.

One chapter writes that there is no need for a registry, as all applications are taken up at the regular monthly meeting, and adds, that most of those who make application are not eligible for membership, anyway. Chicago has sent a circular letter to hospitals and clinics around the city, telling of its bureau; another chapter writes that they have referred all applications to the National Bureau; Oregon says they are having a lot of opposition in Portland because of politics and quackery, but that they are still hanging together. Wisconsin writes they have a very active chapter, and expect to start a registry soon. So the new year ought to bring forth a feeling of friendship and cooperation between the local and National registries that will be of great benefit to all.

It is surprising how many inquiries come to the Bureau because of the ads in the A. M. A. Journal and Modern Hospital. These requests are not necessarily about Physiotherapy positions, but about getting rid of office equipment, finding someone to share expenses in opening a new office, while X-Ray and laboratory technicians continually write about positions. Many girls about to graduate from schools recognized by the Association have written concerning positions, but as one has to be a member before the Bureau can assist them, I have had to write each girl that she must be accepted before I can do anything for her.

I wish this could be changed, as it takes, at best, time for applications to go through channels, and weeks often pass before a reply is received. Meantime the girls are idle. Modification of this ruling, where applicants are from accredited schools, is a question worth consideration, and I hope will be discussed.

We are still advertising alternate weeks in the A. M. A. Journal, and monthly in the Modern Hospital.

A report in detail of finances is herewith enclosed, showing a balance as of June, 1931, of $1.00.

With my best wish for a most successful Convention,

Respectfully submitted,

C. GRACE COURTER.

June, 1931.

FINANCIAL REPORT BUREAU OF APPOINTMENTS, JUNE, 1930-JUNE, 1931

Balance, June, 1930		
Receipts		
October, 1930, check from treasurer		$20.00
Disbursements		
June-October, 1930:		
Express charges, typewriter	$ 3.00	
Balance due G. Courter	6.44	
Stamps, telegrams	4.55	
		$13.99
November, 1930-June, 1931:		
Stamps, telegrams	5.01	
		$19.00
Balance, June, 1931		$ 1.00

Respectfully submitted,

C. GRACE COURTER.

Editor's Report

Madam President:

The report of THE PHYSIOTHERAPY REVIEW shows a normal growth as it is steadily finding its way into the hands of more readers and into the libraries of medical schools, medical associations, hospitals, colleges and visit-nurse's associations.

In trying to keep down that always dread item, expense, we have found it not always feasible to print the many valuable pictures which have accompanied the articles. We hope that in the near future we may be able to do so.

The contributions of the chapters have been the main interest of the publication and a very important indication of the awakeness of the association.

Miss Beard's ceaseless work for subscriptions and advertisements has contributed tremendously towards success. However, we always need more advertisements and recommend that as a field for some chapter work.

May the editor take this opportunity to thank Miss Beard and Miss Morrison and Doctor Coulter for their by-monthly faithful contributions. May we all keep on with the steady upward growth.

June 8, 1931. DOROTHEA M. BECK.

Report of the National Committee on Education

Madam President and Fellow Members:

During the past year we have had a great many inquiries as to the schools offering courses in physiotherapy or physical therapy by people interested in taking courses in a recognized school; also requests from schools to find out the requirements of this Association.

During the first few weeks of the activity of this Committee we tried to get in touch with all of the members, or rather all of the officers of the local Chapters, asking them to cooperate and to send us the names of their Committeemen so they could become active in this Committee.

It always seems that when someone gets up to give a talk they are asking for something. Perhaps it is money, and perhaps it is something else; but here is one time we are not asking something of you, we are trying to give you something, and all we ask is that you become perhaps a little more education-conscious. That is, try to cooperate a little more with us. If you

have problems along educational lines, write in and tell us about them because every time you do that it helps the people who are working on that Committee that much more in trying to find out and in trying to settle the things that come up. It would be so much better if you would advise us of your problems and perhaps be a little bit more diligent in your local Chapters on the subject of cooperation and also on the subject of education.

The first thing that we perhaps should bring up at this time is a short discussion on the subject of the requirements of the Association on education, and in order to do that it will be necessary to delve into past history. Some years ago a curriculum was accepted by the American Physiotherapy Association. In this curriculum it was provided that students who were accepted in the recognized courses of physical therapy be graduates of a school of physical education or a school of nursing, a recognized school of nursing.

Another thing to bear in mind is that the schools that have been accepted up to the present time have been accepted with the understanding that at the end of a prescribed time they will have met the requirements of this Association as far as education is concerned.

There is no school that is perfect or does meet all the requirements of the Association to date. However, they were brought in with the understanding that they would try to meet these requirements within a given period of time.

During the past year we have tried to make a survey of the courses offered by the schools of physical education; that is, the schools approved by the National Physical Education Association, and schools of nursing. The material gathered will be ready for distribution to the various schools within the near future, and any other individual or group of individuals who care to have this material may secure it through this Committee. We will be very glad to distribute to you as many copies as you may desire.

The recommendations that this Committee wishes to make are as follows:

1. That the present courses that are now being given be improved, and that their status be raised to that of a graduate course.

2. That a pre-physical therapy course be worked out in schools of physical education that are connected with universities (that, of course, would include schools of nursing) where a degree would be offered at the completion of the course.

3. That the schools accept for students from schools of nursing the standards of the American Nurses' Association.

Report of the Committee on Publicity

We have struggled through the first year of our existence feeling we have scarcely gained our footing as yet. However, with a little more forbearance, we hope to take our place as a full-fledged, efficiently operating part of the whole.

There still is a misunderstanding among some chapters that the local chairman of the Commitee on Education and Publicity might function on both national committees. In other chapters there seems to be no Committee of Publicity.

Five chapters, namely: Cleveland, New York, Rhode Island, District of Columbia, and Washington, have not been heard from.

We notice from a paragraph in the Academy of Medicine that Cleveland, however, has not been idle—more power to them—but the rest of us need your cooperation and the stimulus of your activity. The paragraph reads:

A SERVICE FOR YOUR PATIENTS

"The Academy of Medicine has on file a list of qualified physiotherapists who are associate members of the Academy and whose services are available to physicians in their private practice.

"A call to the office of the Academy will provide you with their names and with the names of Academy members who have used their services advantageously.

"All of these physiotherapists work directly under physicians and not as limited practitioners. Among other things the services they offer include:

"Corrective and Postural Exercises, Individual Gymnastics, and Rehabilitation following fractures or paralysis."

The Chicago Chapter, through its Bureau of Appointments, extended a similar service to its members and to the Chicago Medical Society and members of the Othopedic Society as well as to the various hospitals of the city by sending out printed announcements.

The Minnesota Chapter was heard from but no report of activity.

The Northern California Chapter secretary answered but no word from the Committee on Publicity.

The Southern California Chapter has had an ad in the Los Angeles County Medical Journal from time to time.

Oregon Chapter answered but had no ideas or suggestion.

The Wisconsin Chapter President answered that the Chairman of the Publicity Committee had been notified but no word has been received.

The Massachusetts Chapter was heard from through its President but the Committee made no report.

A letter from the Secretary of the Pennsylvania Chapter saying the Committee's letter had been sent to the chairman of their Committee but no report has been received. Likewise the Michigan and Texas Chapters.

The New Jersey Chapter is an outstanding example of what can be done. To quote from their report:

"Because our Chapter is so new we are especially anxious to make ourselves known to the Medical men in the state. We have formed a registry or an appointment bureau.

"Last spring a letter was sent to every hospital in the state and to the secretary of each County Medical Society explaining our registry. We want them to know that they should come to us when in need of Physical Therapy Technicians. Other letters will occasionally follow this first one, but only to the Medical Societies.

"We are subscribing to one copy of the PHYSIOTHERAPY REVIEW to be sent to the editor of the New Jersey Medical Society Journal, and a second copy to be placed in the Medical library. By having our magazine there, they may be inspired to read it and be more interested in Physiotherapy.

"At present we have two articles which we would like to have published in the State Medical Journal—one an article telling about our society, to be published only once, the other merely a short advertisement to be put in each publication."

If in making this report we can stimulate interest in those chapters not yet heard from it will be that one step accomplished and we hope that the second year will have all chapters caught up with the few outstanding ones.

Respectfully submitted,
CHARLOTTE MORRISON, Chairman.

Report of the Legislative Committee

Last June at the meeting of the American Physiotherapy Association at Detroit, Mich., the American Physiotherapy Association went on record as being opposed to both licensure and registration and to make membership in the American Physiotherapy Association its standards, and to inform the medical profession of our standards and try to get their cooperation.

Some of the chapters in the larger cities have established vocational bureaus, thereby trying to get publicity. How they will work out will be a matter of the future.

Reports from the various section chairmen throughout the United States:

MINNESOTA CHAPTER—Sarah Kollman, Chairman. No legislation pertaining to Physiotherapy for the past two years.

IOWA—There is just one member of the A. P. A. Miss Lena Fett. She reports that she has never worked in that state, and to her knowledge there is no legislation relative to Physiotherapy.

MISSOURI—Kari Hayen left Kansas City one year ago. There was no legislation at that time. She is also the only member listed for Missouri.

LOUISIANA—Has no member of the American Physiotherapy Association.

DISTRICT OF COLUMBIA CHAPTER—Emma Vogel, Chairman. Reports that owing to the fact that so many bills are being presented by the drugless healers—under which in most states Physiotherapy is listed—they are going to work to get registration.

CHICAGO CHAPTER—Irma Walker, Chairman. During April, 1931, a bill was introduced into the Illinois State Senate as No. 197, an act to regulate the practice of Physiotherapy and to authorize the Department of Registration to educate and to license such practitioners to use manual, physical and mechanical measures and all natural methods for therapeutic practices. The bill was thoroughly investigated and found to be ambiguous and not to conform to the standards of the American Physiotherapy Association and to be decidedly objectionable. A discussion of the bill and our reasons for opposing it was sent to the Chicago Medical Society who supported us and sent our letter on to their representative in Springfield, where the protest of the Illinois State Medical Association was also added. The bill was defeated in the Committee, and still remains in the Committee, where we hope it will die from lack of nourishment.

The Chicago Chapter feels that with all these various bills being presented every year that American Physiotherapy Association will be forced to formulate a bill, which is a matter to be considered this coming year.

WISCONSIN—Catherine Clark, Chairman. There has been no bills presented this year pertaining to Physiotherapy, neither have they any plans for the future for physiotherapy legislation.

CALIFORNIA—Susan Roen, Chairman, reports that nothing has been done about legislation this last year. That they understood that the National American Physiotherapy Association at the meeting last June decided that the time was not ripe. California is the El Dorado for the quacks, so they would have a hard time to get any bills through in that state.

PENNSYLVANIA—Mary Rump, Chairman. Pennsylvania State laws are very good if there was only a much stronger body to see that they were enforced, and our Chairman on Publicity and Education is trying every possible way to build up our membership. This year was our year to bring up anything before the legislature. High school credits were asked as requirements for entrance to study in our profession, but after much discussion, the feeling was it would create too great a hardship to jump to high school credits at once on account of the new classes entering this fall. It was decided to have two years high school as professional credit requirements after July, 1932.

The drugless healers are very busy here also. There was a movement to have one examining board for all cults and Physiotherapy was not mentioned. It was laid on the table, so it will be two years before it can be brought up again.

MASSACHUSETTS CHAPTER—Miss Mary McMillan, Chairman. There has been no attempt to establish any legislation in our state. The truth is that we feel strongly that in Massachusetts we are better off under no legislation than to be compelled to go in under "drugless healers," which, from all we can learn, is the only way we can get in.

WASHINGTON CHAPTER—Ruth Babb, Chairman. Washington State has no law directly applying to Physiotherapy. There is a law compelling all medical practitioners to take basic science examinations but as we do not diagnose, but work with the medical profession, we are not required to take the examination. Our membership is so small and the expense and number affected thereby that it hardly seems worth while. The best move, it seems, is to try to educate the medical profession to uphold our standards.

NEW JERSEY AND NEW YORK CHAPTERS—Emily Griffin, Chairman. New York has a registration law by which an applicant for registration must have a four year college course, one year being devoted to physical therapy, preferably in New York University. When that law was passed in 1926 there was no such school. Since then it has been impossible for anyone to become a member of the New York Chapter without this requirement unless they did so fraudulently. Most of the so-called registered physiotherapists who got in under that law were drugless healers.

This spring the Registered Physiotherapists sponsored a bill which would allow them to treat disease without supervision of a licensed physician as required by law. This bill was defeated in the Upper House, due to the pressure of the Medical Society.

The New York Chapter feels that the time has come for us to make an effort to safeguard our profession by preventing another bill, through the medical societies of New York City.

NEW JERSEY CHAPTER—Feels that it would be advisable to consider some plan for the future of the American Physiotherapy Association. Until very recently nothing of importance has been attempted by this section, as it was thought best not to "rush into

politics." However, the time seems right to start the ball rolling and on May 15th we met with the National Chairman and decided on the following plan: A technician from Perth Amboy was delegated to go to Trenton and approach the State Secretary as to the possibility of presenting a bill in the coming legislation setting forth the position of practicing physiotherapy, non-medical, in the state. He was told that several years ago the question had been brought up but that they were not able to come to a satisfactory definition of "Physiotherapy." When told of the acceptance of the Council on Physical Therapy of the A. M. A., Vol. 87, No. 16, Oct. 16, 1926, p. 1302, he indicated that something might be done next September. In the meantime we are interesting the County and State Societies in the Standards of the A. P. A., hoping for their influence and cooperation.

DELAWARE—A bill was presented which the Governor vetoed.

CLEVELAND CHAPTER—Miss Witterhouse, Chairman. Nothing has been done regarding legislation the past year. We hardly have enough physiotherapy technicians in Ohio to carry a thing like that through.

We have been advised to wait until the National Association formulates a program for state legislation so that we can have something to go by and so that all states will have uniform laws. This seems a better idea than the one the nurses had in which each state has a different law, consequently only a few states have reciprocity.

Cleveland Chapter suggests that the National Legislative Committee should arrange a program as to what we desire to do regarding state examinations and registration of Physical Therapy Technicians.

This completes the report from the various section chairmen throughout the United States. As you see, there have been no bills presented by our chapters this last year.

The question now arises, what shall we do for the future? Are we large enough a body to combat the numerous cults which predominate this country? Politics we know holds sway everywhere, depending upon how the legislators and senators have been approached. We have many friends in the medical profession who are pulling for us.

The Committee feels that we must give this matter serious thought, and when the time comes for us to present any form of legislation we should be one body pulling for one aim: Cooperation must be our slogan.

Respectfully submitted, June 8, 1931,

MATHEA BOXETH, Chairman.

We are glad to say that the article "Neuritis—As Seen by an Orthopaedic Surgeon," which appeared in the May-June issue, was written by Doctor Mark Rogers of Boston.

"Recreation for the Physically Handicapped," an extract of which appeared in the March-April issue of the REVIEW, is now available in complete pamphlet form. This is an extremely valuable compilation for those working with handicapped children and may be had for one dollar from the Department of Physical Education of the University of Wisconsin, Madison, Wis.

Abstracts

By John S. Coulter, M. D.

Studies on Effect of Physical Therapeutic Procedures on Function and Structure. 1. Effect of Blood Flow in a Normal Limb*.

(*From the department of Physiology and Physical Therapy, Northwestern University Medical School.)

Harold Wolfson, M. D., Chicago, in Jour. A. M. A., 96:24:2019, June 13, 1931.

In the first group are those methods which through one or another form of action, increase the blood flow to a noticeable degree, i. e., heat, massage and passive motion. Heat causes a gradual increase until a peak is reached; it maintains this for a variable period of time and then gradually decreases even though the heat may continue to be applied. This must be due to an active dilatation of the blood vessels.

Massage and passive motion, while they both also produce an increase, differ in manner from heat but are similar to each other. They cause a great initial increase with a fairly rapid decrease to a rate less than normal even before the end of stimulation. This appears to be purely a mechanical action, the initial rise being due to a forced evacuation of the blood vessels which is so complete that the blood flow seems to stop by the end of the manipulation. Immediately following the cessation of the procedure the blood flow slowly returns to normal since it must not only resume flow but also fill the evacuated and compressed blood vessels.

The second group, which includes all the forms of electrical treatment used, was inconsistent in effecting changes in the rate of flow. Only occasionally, if an interrupted galvanic or sinusoidal current stronger than could be clinically used was applied and vigorous contractions thereby attained, was the result even approximately the same as that obtained by the use of massage and passive motion. Apparently, then, it is the contraction per se, regardless of how induced, that causes a mechanical change in the blood flow.

Clinically heat and massage have always been used together, the combination seeming to prove of greater value than either used alone. It appears, then, that here is possibly the explanation for the efficacy of this combined therapy. Heat produces a dilatation with some increase in the rate of flow; then by massage and passive motion these vessels are completely emptied mechanically, with a removal of stagnant cells and the products of catabolism, allowing a complete change of the blood supply to take place.

Further, these experiments not only confirm the value of the combined therapy but also suggest that shorter periods of massage and passive motion more frequently used would be of greater value than a long combined application. Unless this is done, the blood vessels having been emptied, nothing is accomplished by the procedure until they have been completely refilled and the new supply of blood allowed time to have accomplished its function.

Electricity, as applied, is ineffective in increasing the blood flow. Its value in the treatment of poliomyelitis and peripheral nerve injuries may be due to some other effects not studied in these experiments.

Studies in the Physiology of Exercise. Acid Base Changes in the Serum of Exercised Dogs. Hugh A. Rice and Arthur H. Steinhaus in Am. J. Physiol., XCVI:3:529, March 1, 1931.

(From the Y. M. C. A. College Laboratory for Physiologic Research in Physical Education, Chicago, Illinois.)

In their summary the authors say that: "From the analysis of series of blood samples drawn from dogs and men before, during and after various forms of exercise the following conclusions seem warranted:

1. During strenuous exercise on a 22 per cent grade motor driven treadmill the serum of the dog's blood shows a more alkaline pH coincident with reduction in the bicarbonate and CO_2 tension. These changes are related in time and degree to a gradually mounting body temperature. Exhaustion in this form of exercise is characterized by alkalosis and over-heating.

2. Dogs exercised by swimming in water at temperatures of 20 degrees and lower show rising CO_2 tensions, more acid pH and lowering of the bicarbonates of the serum. An otherwise steady body temperature drops below normal as the animal nears the exhaustion point.

3. While swimming at water temperatures between 25 and 30 degrees C., a minimum of disturbance is noticed in the dog's acid base balance and body temperature until just before the corresponding postponed fatigue point is neared.

4. Overheating without exercise, and swimming in water with temperatures around 40 degrees C., show serum changes in the dog's blood similar to those found in treadmill running.

5. The blood changes in man during ergometer exercise, however, quite opposite to those of the dog exercised by running, parallel closely those of the dog exercised by swimming in water at moderate temperatures.

6. Our findings emphasize the need for observing the greatest caution in attempting to translate the results gained from the study of exercised dogs into human physiology unless the conditions here described have been given full consideration. In this light swimming at appropriate water temperatures suggests itself as being preferable to treadmill running when dogs are used in exercise experiments.

Excessive Ultraviolet Irradiation. Effect on the Nutrition and Endocrine Glands of Rats. Alfred F. Hess, M. D., and Philip E. Smith, Ph. D., New York, in Amer. J. Dis. Children, 41:4:775, April, 1931.

In spite of the fact that ultraviolet radiation has been made use of during the past ten years or more to an increasing extent, no prolonged observations have been made on the effect of this remarkable remedial agent on the growth and functions of the body. This is all the

more remarkable, as from time to time the question has been raised as to whether these radiations may not inflict harm as well as be of advantage to the animal body. As is well known, the short rays are specific in the protection against and cure of rickets in animals as well as in man. This effect has been so definite and so striking that this method of therapy has been applied in the clinic to an increasing number of pathological conditions, even those that have not been associated with definite disturbances in the metabolism of calcium or phosphorus. What seemed to be particularly lacking were observations made for an extended period concerning the effect of irradiation of animals, under conditions that were fully controlled and uniform, for comparison with results in animals not irradiated. With this object in mind, we subjected two series of rats to irradiation by means of a mercury vapor quartz lamp.

CONCLUSIONS

Two series of rats were irradiated with a mercury vapor lamp for a period of from five to six months or were given viosterol. Male as well as female animals were used; those in the first series were littermates; those in the second series, although not littermates, were the progeny of the first. Three intensities of irradiation were given, mild, moderate and severe. Viosterol was given in small as well as in excessive amounts. The main object of the experiment was to note whether prolonged and intense irradiation or large doses of viosterol had a deleterious effect on the animals, as evinced by the rate of growth and by the size and appearance of the endocrine glands.

The growth of the animals subjected to marked intensities of ultraviolet irradiation or given large amounts of viosterol was as good as that of animals which had lived under similar conditions but had not been subjected to radiation or given viosterol. No difference was noted at necropsy between the endocrine glands of the treated and those of the untreated animals.

Clinical Applications of Ultraviolet Rays. John S. Coulter, M. D., and Edwin M. Smith, Jr., M. D., Northwestern University Medical School, Chicago, in Radiology, XVI:5:737, May, 1931.

Psoriasis.—In psoriasis some cases will clear up remarkably well under ultraviolet radiation, while others will fail to respond or even be made worse. In persistently recurring cases ultraviolet light may be used liberally, whereas repeated x-ray treatments are liable to produce permanent skin changes.

Alopecia Areata.—In alopecia areata of recent origin an active hypermia may be produced by intensive doses of ultraviolet light; no improvement can be expected without a hyperemia. In the old cases, especially of the universal type, ultraviolet should be tried even though the prognosis is poor.

Seborrheic alopecia.—In seborrheic alopecia, also, there is a tendency to a degeneration of the hair follicles, and ultraviolet light may produce a fone fuzz which does not develop further, and which tends to fall out.

Acne vulgaris.—In acne vulgaris the best result with ultraviolet light is obtained in the acute stages, where there are a small number of comedones, with some acute inflammation and a rather large amount of oily secretion. Pustular lesions are absorbed rapidly under biweekly doses.

Erysipelas.—Ude has reported the use of ultraviolet in ninety-one patients, followed by as good results as could be expected, with other accepted methods of treatment, including roentgen radiation and antitoxin. With the use of ultraviolet, he points out that the technic is simple, inexpensive, devoid of danger, requires only one treatment, is readily available in practically all communities, and that the results are comparable to those of any other method.

Contra-indications to ultraviolet therapy might include high or continued fever, marked activity of lesions, advanced cardiorenal diseases, acute pulmonary tuberculosis, smallpox, and hyperesthesias to light in such rare conditions as hydroa vacciniforme, hydroa aestivale, and xeroderma pigmentosum.

Corneal ulcers respond well, for which a concentrated form of ultraviolet radiation should be used. In determining our dosage we used a mercury quartz water-cooled lamp on the conjunctiva and cornea of six rabbits. With this lamp at a distance of about one inch it took on the average forty seconds to secure a superficial cell destruction such as could be detected by the use fluoresein. Therefore, we give our patients only a thirty second dose at the same distance. Local treatment is of benefit in corneal ulcer, tuberculosis of the cornea and conjunctiva, trachoma and blepharitis. Herpetic lesions show the most marked effect of such treatment. General body radiations are of benefit in phlyctenular keratitis and in ocular conditions due to tuberculosis.

Ultraviolet radiation has a definite value in the treatment of wounds. The exposure should be made at every change of dressings and increased in accordance with the patient's tolerance.

Ultraviolet is a valuable adjunct in the preparation of infected granulation tissue for skin grafting.

In active rickets a combination of cod liver oil, viosterol and ultraviolet radiation seems most desirable at present.

The main reliance in tuberculosis is still in rest, hygiene and diet, but ultraviolet radiation is one of the most important adjuncts in the treatment. Sunlight is still the best source of ultraviolet.

In laryngeal tuberculosis, general body radiation should be combined with suitable local treatment.

With proper care and conscientious supervision the results obtained by ultraviolet radiation in tuberculosis peritonitis and intestinal tuberculosis are quite encouraging. The greatest caution is necessary in the matter of exposures, and the method of gradual body exposures starting at the feet after the method of Rollier, should be followed with either natural or artificial radiation.

In lymphatic tuberculosis we have obtained excellent results with ultraviolet radiation, and our experience agrees with Mayer. He says: "Tuberculosis lymph nodes may be seen clinically in three different stages. In the first stage, exposure to light is followed by an inflammatory reaction, with slight pain, tenderness and swelling. In the majority of cases the inflammation subsides, and the lymph node finally heals. About thirty per cent of these appear to the writer to show no tendency to heal under light alone; but with x-ray irradiation in addition, a large number of these also will improve. In the second stage of caseation, ultraviolet light exposures alone will frequently bring about resolution. When softened lymph nodes reach the stage of fluctuation, aspiration or incision is necessary, and then ultraviolet radiation is most effective. In the third stage excellent results are obtained in clearing up sinuses of long standing, but occasionally x-ray exposures may have to be combined with light treatment for complete healing to take place. Local irradiation of the sinus area should be made, in addition to general irradiation of the body. In cured cases exposures have varied from three to eight months."

Ultraviolet radiation has a place in the treatment of arthritis. Its influence is not specific, but it has a definite value when the patient has a secondary anemia or is suffering from a lack of sunlight due to confinement in bed.

We have been cooperating with the Department of Medicine in the use of ultraviolet radiation in asthma. Unger of this Department says: "For about three years we have been using ultraviolet light as an accessory method of treatment. We believe it helps as a tonic and it seems to be specially valuable in the undernourished. We believe that it has no specific value, yet our results have certainly been improved since we adopted its use."

Present Status of Heliotherapy in Tuberculosis. Charles K. Petter, M. D., Glen Lake Sanitarium, Oak Terrace, Minn., in Annals of Internal Medicine, 4:11:1452, May, 1931.

Radiant energy in the range 2800-8000 A produces very definite physiologic effects, some due to the ultraviolet alone; others to the visible alone and still others to the entire range. These effects are briefly:

Erythema and slight tanning accomplished by improvement in the health, texture and function of the skin.

In the blood there is an increase in hemoglobin, a rise in red count and platelet count. The lymphocytes show an initial drop following irradiation with subsequent rise while the polynuclear elements are increased.

The calcium phosphorus balance is brought to normal.

Blood pressure tends to become lower, while pulse rate shows an initial rise with subsequent drop to normal or below.

Body temperature experiences an initial rise but returns to within one degree of normal shortly after irradiation has ceased.

Basal metabolic rate is not increased.

Muscles experience an improvement in tone, contour and nutrition.

Healing is stimulated and tuberculosis processes affected quite specifically.

There is probably a definite chemical effect on the blood.

Sun baths produce the liberation of varying amounts of tuberculin and thus act the same as work on the tuberculous process.

The child with tracheo-bronchial glandular tuberculosis presents a very definite indication for heliotherapy and the treatment will give him the maximum insurance against future disability from tuberculous disease.

In the treatment of the adult form of pulmonary tuberculosis with heliotherapy, much unnecessary fear and unjust criticism of this therapeutic agent has arisen.

In these pulmonary cases we may expect improvement in general condition, decrease in lung moisture, "rales"; decrease in sputum, it very often becoming negative, and increased fibrosis.

Bone and joint tuberculosis presents probably the largest group of extra pulmonary cases which we are called upon to treat.

Orthopedic measures must never be overlooked, and surgery plays a definite part in treatment. Before any surgical procedure is instituted, heliotherapy should be carried out for several months in order to bring the lesion to a quiescent state, if possible.

Tuberculosis of superficial lymph nodes with and without softening and sinus formation responds well to heliotherapy.

Tuberculosis pleuritis, with effusion, while an accompaniment of pulmonary tuberculosis, often clears with the aid of sun baths and I believe every case of pleural effusion (tuberculous) unless accompanied by a florid pulmonary lesion should have heliotherapy.

Tuberculosis of the peritoneum is a secondary manifestation of a tuberculous lesion in the bowel, intra-abdominal or pelvic lymph nodes or pelvic organs. Rest and hygienic treatment plus heliotherapy over many months will produce a marked reduction in symptoms and local signs.

Genito-urinary tuberculosis presents a complex picture unless the infection is unilateral or limited to a single organ which may be extirpated. When a unilateral renal tuberculosis is proven, the patient should have (1) heliotherapy during study, (2) the nephrectomy, and (3) further heliotherapy. Tuberculosis of both kidneys, or of the bladder or genitalia, demands prolonged rest and heliotherapy.

Tuberculosis of the skin in this country does not present the problem that it does in Europe.

In treating local lesions of the middle ear, larynx and eye, as well as ulceration of the anus and lower rectum and lesions of the skin, the Kromayer lamp has proven of definite value as an adjunct to hygienic and rest treatment.

Certain important factors must not be overlooked. First of all, each patient is a new problem in therapeutics from the heliotherapist's standpoint. No two people react exactly the same to equal doses of light nor do two cases of tuberculosis present the same clinical features.

Secondly, too much irradiation, instead of being beneficial will be harmful by setting up reaction. The third factor to be observed is the reaction of temperature and pulse rate following irradiation.

Rollier drew up an arbitrary norm which serves as the foundation for all heliotherapy prescriptions. His plan is to divide the body into five zones and expose each zone for a period of five minutes anteriorly and posteriorly until the patient is receiving a total of two to four hours insolation each day.

The question of the mercury arc versus the carbon arc is one which we believe can be definitely settled. It has been our experience that at the end of the sun season, patients are in much better condition than they are in the following spring after several months of quartz mercury arc irradiation. On the other hand, a few patients who have had carbon arc irradiation have continued to progress during the winter months just as they did under solar irradiation.

The Management of Pulmonary Tuberculosis. Morris Schwartz, Philadelphia, in Med. J. & R., CXXXIII:11: 529, June 3, 1931.

Diagnosis by x-ray.—No person should be labeled tuberculous and be treated accordingly unless the diagnosis is made upon clinical grounds, which I insist should include competent roentgenologic studies.

Where to treat the patient.—A tuberculous individual should be treated either at home or in an institution expressly equipped to treat such cases. It is a common but dangerous practice to order the phthisical patient to go to the country or to send him west or any place away from home.

Outdoor versus indoor treatment.—Certain patients of the younger or more robust types soon learn to like and do well with the so-called outdoor treatment, but the asthenic and the old find it disagreeable and are not benefited.

Heliotherapy.—Recently a school has arisen which advocates the treatment of phthisis by exposing the entire body, especially the chest, to the direct rays of the

sun, or to the ultraviolet rays as generated by the quartz or carbon arc lamps. This is dangerous treatment. The overexposure to ultraviolet rays causes reactions similar to those produced by the injection of tuberculin. It causes a form of shock akin to an allergic reaction. It produces a local reaction to the exposed skin; a general reaction, which is manifested by a rise of temperature, increased cardiac and respiratory rate, anorexia and adynamia; and lastly, a focal reaction, causing increased congestion, a breakdown of the fibrous tissue barriers, with a spread of the infection, and is manifested by an increase of rales, cough and sometimes hemoptysis. Heliotherapy in pulmonary tuberculosis is only applicable to certain types of fibroid cases, and then only in the most cautious manner. I have in the past few years seen many instances where the inadvisable use of this modality caused dire results.

Rest and exercise.—In an early or active case the rule should be absolute rest in bed; no bathroom privileges; if possible, feeding should be done by an attendant; the patient should be taught to lie quietly, to move slowly, to abstain from coughing as much as possible, and to breathe slowly and deliberately.

After the acute stage has passed, as indicated by the subsidence of fever and pulse rate, and improvement in the physical signs, graduated increase of activity is permitted. In succession, the patient feeds himself; he sits up in bed; he is permitted to wash himself; he is put out on a chair from a few minutes to several hours as his strength increases, and then he is permitted to walk, exercise and work, according to definite indications.

Feeding.—When the temperature is high and the pulmonary condition is extremely active, a liquid or soft diet is required. When the case is in its chronic stage, a full diet is indicated.

Medication.—In general, the less medicine the better.

Special procedures.—Artificial pneumothorax, phrenicectomy, separation of pleural adhesions and thoracoplasty represent the most recent advances in the treatment of the disease in question. They have revolutionized treatment, have saved thousands of lives, have restored many dependent individuals to economic usefulness, and have reduced the period of morbidity to a very marked degree.

A Study of Intestinal Tuberculosis. W. C. Davis, M. D., formerly of United States Veterans' Hospital, Tucson, Ariz., in United States Vet. Bureau M. Bull., 7:4:344, April, 1931.

It is impossible to over-emphasize the value of rest in the treatment of intestinal tuberculosis. It is the author's opinion that no form of treatment is known that will with consistency favorably influence this disease except where a regimen of rest is strictly observed.

The favorable influence of general (rather than local) irradiations by the antinic rays produced by the mercury quartz vapor or carbon arc lamps are extremely gratifying. However, reliance upon this form of treatment without emphasis being placed upon the need of bed rest is not justified. When the two are combined, improvement may confidently be expected, except in the near-terminal group.

Abatement of symptoms and lessening of x-ray evidence of spasm and hypermotility may be expected in three to six weeks. The lessening of discomfort caused by excessive gas in the intestinal tract, which is often the only symptom present, is most often the first sign of improvement.

Natural heliotherapy, except in those instances where there is no pulmonary tuberculosis disease, is emphatically contraindicated. Primary tuberculosis infection of the intestinal tract is rarely seen, but when encountered natural heliotherapy may be considered.

Use of the actinic ray should be continued for a number of months after all clinical and x-ray signs of the disease have disappeared.

The "Alvarez diet," which is cellulose free, easily digested, non-gasforming, and of high caloric value, meets the requirements of those patients whose intestinal disease is marked by more than moderate x-ray signs of spasm and hypermotility, and having clinical manifestations such as discomfort caused by excess gas formation, loose bowel movements, etc.

Calcium chloride administered intravenously seems to cause an amelioration of symptoms, such as gas pains, intestinal colic, and diarrhea, and often favorably influences the appetite. It should be remembered, however, that its value is found in its beneficent influence upon symptoms and not in its curative powers.

Other special forms of treatment, such as pneumoperitoneum or Rontgen ray therapy will rarely be needed.

Surgical interference is rarely indicated except in the hypertrophic form where occlusion of the gut lumen is threatened.

Outline of the Diagnosis and Treatment of Intestinal Tuberculosis. Lane B. Kline, M. D., United States Veterans' Hospital, Aspinwall, Pa., U. S. Vet. Bur. Med. Bull., 7:5:445, May, 1931.

The following outline of treatment is the outgrowth of studies in the treatment of 233 patients who ran the gamut from early lesions to those first seen in the terminal stage. In this group 8.15 per cent were cured; a "cure" in this instance was based on negative X-ray evidence of tuberculosis enteritis, absence of clinical symptoms and physical findings following a reasonable lapse of time. 35.6 per cent were improved. This gives a total of 43.75 per cent cured and improved.

Rest.—The consideration of rest is a very good theme with which to begin the treatment of tuberculosis in any form. The technique of rest is all too seldom observed. It must be followed through according to a definite schedule; and, as no chain is stronger than its weakest link, "rest cures" are just as effective as their infractions, often apparently minor and thoughtless, will permit. Graduated exercise, the companion of rest, should be promptly but cautiously begun when indicated.

Vitamins.—Vitamin loss induces gastrointestinal disturbances, which further enhance loss of appetite and distaste for any food. McConkey states: "The addition of cod-liver oil and tomato juice to the ordinary hospital diet is adequate treatment for intestinal tuberculosis complicating pulmonary disease." He found this treatment superior to light therapy, as evidenced by relief of symptoms, gain in weight, healing of lesions, and reduction in death rate.

Dietetic Measures.—At the beginning of treatment a low cellulose, bland (Alvarez) diet is indicated.

Heliotherapy.—Experience and observation have forced the author to the opinion that open-air exposure to sunlight is the best form of "light treatment." The carbon arc and ultra-violet lights are substitutes. That they serve a purpose and have a definite place is admitted. Exposure to open air appears necessary. Patients deprived of it by clothing or bedcovers over long periods do not do well. Regulated and supervised sunlight furnish those rays in natural form.

Psychotherapy.—Cannon, Rehfuss, Alvarez, Pavlov, and others have repeatedly directed our attention to the influences which mental and emotional states exert on the behavior of the gastrointestinal tract. Peace of mind, cheerfulness and a hopeful outlook have a direct bearing on digestion.

Actinotherapy at a Tuberculosis Dispensary. By Geo. Jessel, M. D., Oxf., D. P. H., Consultant Tuberculosis Officer Lancashire County Council, in the Lancet, CCXX: 5622:1182, May 30, 1931.

As Reyn has pointed out, lupus can be improved by light baths alone, but a real cure will not occur without the application of concentrated light. This has been obtained by the use of the water cooled mercury vapor lamp with exposures long enough to obtain a blister (5 to 20 minutes), care being taken, by pressure of the lens to render the part as bloodless as possible.

Apart from lupus and scrofulous conditions of the skin, the next largest group treated has been tuberculous glands with softening, and frequently with skin involvement. In these cases local treatment of the glandular condition is essential, by aspiration if possible, or by incision when the skin cannot be saved. The results in these cases have usually been good. More intractible is adenitis without softening. Local treatment with the Jesionek lamp in addition to general exposures to carbon arc or mercury vapor lamps has been found useful. It results in either (a) softening, when the local pressure should cease and aspiration be done; or (b) hardening and shrinking of the glands. The net result is frequently the presence of small hard glands, which are apparently quiescent. No cases of pulmonary tuberculosis have been treated.

RESULTS

The present paper deals with the three years 1928-30, during which period 273 cases have been treated. Of this number 63 ceased treatment for one reason or another. 152 patients had been discharged as quiescent, leaving 53 still under treatment. The average duration of all of the 152 cases was 7¾ months.

In 90 the pigmentation was deep and in 51 medium, and improvement appears to be definitely associated with a good degree of pigmentation. As the ultraviolet rays cannot penetrate pigmented skin, early deep pigmentation is undesirable. With very deep pigmentation the carbon arc baths have sometimes been temporarily suspended or replaced by exposure to the Jessionek lamp, local treatment being continued. The five cases without pigmentation received local treatment only.

CONCLUSIONS

Artificial light treatment can be successfully given at tuberculosis dispensaries under the control of local authorities.

It is especially useful in cases of lupus and allied skin conditions, adenitis with and without softening and other superficial conditions.

It is much less effective in the treatment of diseases of the larger joints and bones, which should be sent to special residential institutions.

In the treatment of lupus a combination of general light therapy with local treatment, e. g., Kromayer lamp, is usually necessary, and the carbon arc bath is much preferred to the mercury vapor lamp for general irradiation. Prolonged exposure to weak carbons is preferable to brief exposure to strong cored carbons. It is efficacious, safe and particularly suitable for use by tuberculosis officers who have other duties to perform outside their dispensaries.

To obtain the best results, actinotherapy needs frequently to be combined with various forms of local treatment—e. g., the use of suitable caustics in lupus, and the aspiration or incision of abscesses. Painstaking attention to detail on the part of the doctor and nurse, and the regular attendance of the patient are essential for success.

The Use of Massage in Internal Medicine. Ralph Pemberton, M. D., Philadelphia, in Jour. A. M. A., 96:21:1777, May 23, 1931.

In arthritis there is a wide and important field for the application of massage.

Massage has three chief indications in the arthritic syndrome: First, to improve or maintain adequate conditions of circulation and drainage in the neighborhood of involved joints; second, to improve or correct the faulty physiologic processes in the soft structures and especially the muscles; and, third, to compensate somewhat for the lack of muscular activity that inevitably follows protracted local or systemic disability from arthritis or the rheumatoid syndrome. In this last connection it is thus possible to preserve in considerable degree the normal tone and bulk of muscle structure and even to bring about in atrophied muscles an apparent increase in muscle volume or at least in muscle tone as evidenced by the resistance and consistency of the tissues under the palpating hand. It should be a cardinal principle in the application of massage in arthritis that treatment should never add by trauma to the inflammatory or otherwise diseased process already present. It follows from this that massage should, for the most part, be practiced in the neighborhood of, but not immediately over, the site of arthritic involvement. There are some exceptions to this statement, in that effleurage of the lightest kind may sometimes be practiced with profit over a diseased joint.

It is to be remembered that most persons who practice massage are technicians without a basal knowledge of medicine, though activated by a commendable zeal for their work. Knowing of the benefits often to be derived they are not infrequently led to believe that, if a little is good, more will be better and so are led to carry treatment beyond the proper point.

In connection with arthritis, massage can usually be preceded with profit by the application of heat to the involved part. As explained elsewhere, this opens up vascular channels and softens the tissues, permits a more vigorous application of massage, a larger range of motion of the parts concerned, and generally paves the way for massage itself.

Under nearly all circumstances, massage directed to the neighborhood of joints must be unaccompanied by movement of the joint. "Churning" of the joint is to be studiously avoided. One of the commonest errors made by masseurs in general is that of inducing twisting movements to the finger or other joints, together with passive flexion and extension of nearly all involved joints. A subsiding arthritis may easily be perpetuated or made worse by activities of this sort.

An advantage in directing massage to the tissues somewhat removed from the joint itself lies, thus, in avoiding under passive movement of the actual joint structures.

One of the sharp therapeutic advantages in recognizing the two chief types of arthritis is in respect to the fact that arthritis of the atrophic type is prone to lead to fibrous and finally to bony ankylosis, depending on the particular apposition of the bones of the joint and on the duration of inactivity. In this type of arthritis

motion should be encouraged within the limit of further trauma, preferably in the form of voluntary motion.

Because of the systemic nature of the rheumatoid syndrome there also tends to arise an atrophy of muscular tissue referable to a process of "fibrositis" as well as to disuse. Massage, with or without the accompaniment of heat, is one of the few measures that will affect this situation.

A definite contraindication to massage, most of all to vigorous massage, is to be seen in cases, arthritic or otherwise, accompanied by fever or by any debilitating complication.

The use of massage in disturbances of the circulation.—One of the fields in which it might be supposed that massage would have an obvious application is that of disturbance of the circulation.

In almost any cardiac condition with decompensation accompanied by edema, gravity determines localization of the edema to the dependent parts. These parts are usually the feet, the legs, the buttocks and the back. In such cases, therapy is customarily confined for the most part to restriction of the fluid and food intake with or without pharmacologic efforts to increase the vis a tergo from the heart. The peripheral tissues of the body are often left to cope, as best they may, with the fluids in them. In health the circulatory dynamics are aided by contraction of the long muscles, a factor which is, of course, absent in conditions of inactivity and enforced rest accompanying heart disease. Under the latter circumstances, properly given massage may be useful.

Massage is no more a specific in such conditions than is rest or the exhibition of digitalis, but, together with these and with a suitable curtailment of the diet and fluid intake, it further influences the mechanics of the situation.

The use of massage in anemia.—The return of red cells to the circulation achieved by massage should be of limited but definite importance in anemic persons. The increase in the red cell count following massage is demonstrable in any normal individual, but it is noteworthy that this influence is apparently more graphic in anemia than in conditions of health.

Massage in chronic disease at large.—The practice of allowing patients to lie or rest in bed without the institution of measures capable of compensating in part for the normal activities of life is far too common.

The use of massage is important also as a contribution to the maintenance of health in the elderly. As such persons become less able to take exercise and of necessity lead more sedentary lives, they lose many of the benefits incidental to bodily activity. Massage offers a partial substitute for such activity.

Whatever the purposes of systemic massage, whether for a specific disease or for more general ends, it must always be followed, as elsewhere pointed out, by an adequate period of rest, generally about an hour.

Arthritis. Loring T. Swaim, M. D., Boston, Mass., in Pennsylvania M. J., XXXIV:8:537, May, 1931.

Atrophic arthritis occurs chiefly in women between the ages of twenty and forty, usually in what is called the asthenic or slender type, with light bones and rather sensitive sympathetic nervous system. It is the destructive type of arthritis with decalcification of the whole bony system, atrophy of muscles, skin, hair, fingernails as well as bone, and may end in complete destruction of the joints with bony ankylosis. The hypertrophic or osteoarthritis is a disease occurring slightly more often in men than in women after the age of fifty. It is often associated with the menopause. It occurs in the heavy anatomic type. It is principally a degenerative process occurring late in life as one of the degenerative changes of old age, in joints which had been constantly damaged by the strain of use.

The most outstanding clinical signs are found in the circulatory system. From early childhood many of these arthritics show cold hands and feet. There are frequent vasomotor disturbances which come and go, and a study of the capillary fields show that many of these small arterioles are not only collapsed and closed but oftentimes show considerable sluggishness of the flow even in those that are left.

We find, also, fairly consistent low blood pressure as a manifestation of atrophic arthritis, a subnormal temperature, 80 per cent with lowered metabolism, if zero is taken as the dividing line, about 60 per cent below the lowest normal of —10. Pemberton has found that the blood shows a delayed sugar and oxygen utilization. About 76 per cent of the arthritics show this characteristic failure of the tissues to ultilize sugar or oxygen. This delayed sugar utilization has been produced in the potential arthritic. Again poor circulation has been manifested by the decrease in the number of red cells and hemoglobin in the first drop of blood examined from a puncture.

We find the calcium and phosphorus, and the nonprotein nitrogen within normal limits.

Focal infections have been recorded as frequently found in arthritis. It is still not clear, however, that focal infection preceded the arthritis, or vice versa, as has often been noted as part of the generally poor condition of the arthritic.

It would seem that the streptococcus was the most likely and frequent offender. Biologic experimentation has not been entirely satisfactory.

Most of the men working on arthritis have also recorded the finding of the atonic colon with sometimes the picture of partial spasticity of certain areas in the large intestine, with complete lack of tone in other parts, resulting in a stasis of oftentimes 72 hours. These roentgenograms show a loss of haustral markings and smoothing out of the large bowel, and under these conditions undoubtedly abnormal productions, both bacterial and chemical, can be easily produced. Our present treatment is based then on these clinical facts of which we have spoken. If infection is present and seems to be one of the main factors in the case, this focus of infection should be removed. Great care must be used not to do it at the wrong time. Vaccines may be used.

It would seem, therefore, that at present the main points of treatment come down to practically the same things that we have gradually worked out for tuberculosis. The tuberculous patient gets well because his general resistance and vitality are increased. It would seem as if the atrophic arthritic did exactly the same thing. His general resistance should be built up, taking into consideration the factors which are present:

Correction of posture and putting the body in the best possible working position oftentimes is the deciding factor in the production of physical resistance sufficient to overcome the disease.

The prevention of fatigue by rest.

The regulation of diet, so that the greatest amount of mineral salts and vitamin are present in the diet, decreasing the amount of acid-forming foods which tend to take away the mineral salts of the body. A diet largely consisting of fruit, milk, butter, fresh vegetables, whole wheat, or better, wheat germ, as a

large container of vitamin B, and cod liver oil for vitamin D.

The circulatory phenomenon which was mentioned should be taken into consideration. This can be done by corrective body exercises and such aids to circulation as hot fomentations, hot soaks, steam baths, massage, baking, sunlight, plenty of rest and fresh air, etc.

The best results come from a combination of efforts to correct the environmental conditions which we find most frequently present. Many of the deformities of arthritis, if taken early, are preventable, and need never go on to the shocking conditions which are so often found.

Forty-fourth Report of Progress In Orthopedic Surgery. Philip D. Wilson, et al., in Arch. Surg., 22:5:857, May, 1931.

TUBERCULOSIS

Nonoperative versus operative treatment.—Rollier reported the results of his method of treatment, which was a combination of heliotherapy, orthopedics and rational diet. The orthopedic treatment included rigorous maintenance of the horizontal decubitus, although it did not involve complete immobilization of the affected point. The use of extension allowed of a cautious and gradual separation of the surface of the joint and avoided painful compressive ulceration. While maintaining relative immobility, it allowed small spontaneous movements of the joint which helped the deep circulation and hastened the healing of the foci in the bone and the regeneration of the cartilages. The fact that restoration of the cartilages occurred was, according to Rollier, clearly shown by the reappearance of the joint space in the roentgenograms, and it was this that explained the frequency with which movement and function were recovered.

Rollier reported the following end results:

	Hip	Knee	Foot
Cure maintained with function, per cent	74.0	66.4	92.6
Cure maintained with normal function, per cent	33.6	41.9	67.0
Cure maintained with partial function, per cent	66.4	58.1	25.0
Ankylosis, per cent	26.0	33.6	7.2

Lo Grasso, in discussing the non-operative treatment of tuberculous joints of the lower extremity, stated that a patient with a tuberculous joint should be treated for the systemic infection and that the disease of the joint should be treated as a complication and not as the primary infection. He felt that operative procedures were likely to disseminate the disease if undertaken during the acute stage. Surgical measures, if necessary, should be undertaken only after a preliminary course of conservative treatment in order to raise the resistance of the patient as much as possible. In his experience conservative treatment usually resulted in healing with useful motion of the joint and without recurrence of the disease.

Hibbs reported on the operative fusion of tuberculous joints of the lower extremity. Fusion was obtained in all the joints operated on except in 11 cases of tuberculosis of the hip joint (8 per cent of 150 cases). There were 154 cases of tuberculosis of the hip joint, 18 cases of tuberculosis of the ankle joint and 4 cases of tuberculosis of the tarsal joints in which the operation was performed during this period of study. There had been no recurrence of the disease in any of the fused joints. The activities of the patients had not been limited by the operation. Because of the compensatory motion in the lumbar spine the patients whose hips had been fused were free from almost any handicap. The author felt that a great advantage of the fusion operation was that it freed the patients from the danger of extension of the disease from the focus in the joint as well as from long, uncertain treatment in hospitals or clinics.

(Ed. Note.—The divergence between the non-operative attitude, as exemplified by Rollier and LoGrasso, and the point of view favoring surgical intervention, as represented by Hibbs, seems as wide as ever. Rollier's article is of importance in that for almost the first time he reports remote results, the sole criterion that should be employed in judging the results of treatment. These results are impressive, and no one employing similar methods in this country has been able to duplicate them. On the other hand, Hibbs reports remarkably good results from fusion operations, and these results can be duplicated by good surgeons anywhere. Taking into consideration economic, social, climatic and geographic factors in the United States, operative treatment seems to offer more in bringing about a cure than nonoperative treatment. We agree with Lo Grasso, however, that the patient must also be treated systemically for the primary infection and to arrest further extension of the disease, and that preferably such treatment should precede rather than follow operation.)

Body Mechanics and Posture. Robert Bayley Osgood, M. D., in Jour. A. M. A., 96:24:2032, June 13, 1931.

In this short discussion of the principles of body mechanics and posture an attempt will be made to impress the medical profession with the importance of developing the body to its highest mechanical efficiency, to the end that the various complicated and correlated systems may function with the least amount of wear and the greatest amount of power. Body mechanics may be said to form the basis of all physical therapy, an irreducible minimum which must be satisfied if one is to expect remedial measures to be most fully effective.

There are two contrasting types of body build, and between them, all grades of variation, approaching from both extremes a theoretical neutral type. There is a "slender," high strung type as one extreme, and a "stocky," placid type as the other extreme. The more serious and significant faults of body mechanics are found among individuals exhibiting the "slender" (visceroptotic) type of body build.

Clinical evidence strongly suggests an intimate relation between body mechanics and health because of the following repeated observations of pediatricians and orthopedic surgeons who have studied the results of training in body mechanics.

1. In the absence of an organic lesion, failure to gain weight and digestive disturbances, although the diet is appropriate and adequate, are frequently associated with poor body mechanics.

2. Bowels that are sluggish and irregular tend to become more active and regular with improvement in body mechanics.

3. Cyclic vomiting and certain presumably toxic crises occurring in individuals exhibiting poor mechanics have ceased concomitantly with the correction of poor body mechanics.

4. Increase in alertness, vigor and endurance is usually noticed with improvement in body mechanics, posture and muscle tone.

Goldthwait, in 1908, called attention to "the relation of posture to human efficiency and the influence of poise on the support and function of the viscera." Sir Arthur Keith has found in his anthropologic studies that the acquirement of good posture tends to correct enteroptosis, and the experimental studies of Mankell and Koenig

amply confirm Sir Arthur's observations. The anatomist MacKenzie has said that, if generalizations were to be made concerning the causes of human diseases, they would be along the line of failure of accommodation to the erect posture.

Rough statistics collected during the universal draft of the World War suggest that less than 50 per cent of the young men of the country exhibit good body mechanics.

The effects of minor malalinements are not immediately felt, and the causes of chronic disorders are often not easy to analyze. If there is evidence (and I believe there is) that poor body mechanics may slowly and over a long period induce unnecessary fatigue, then not only must its causes be sought out but also an attempt must be made to correct it even if a specific cause cannot be found.

The question may very reasonably be asked, "Is good body mechanics, once acquired, retained by any large number of individuals without effort?" Cook at Yale found that the improved grades of body mechanics attained by the students as a result of training carried on during the college year till the end of the spring term were in the majority of instances retained when they returned in the autumn after a summer of no special training.

Of the surprising prevalence of faulty body mechanics and poor posture there can be no doubt. Of the close association of good body mechanics and good functional health and of poor body mechanics and poor functional health, the physiologic basis is sound and the clinical evidence is strong.

Congenital Torticollis. K. G. Hansson, M. D., Director Physical Therapy Department, Hospital for Ruptured and Crippled, New York, in Med. Times & L. I. M. J., LIX:4:139, April, 1931.

The cases presented to you tonight are cases of congenital torticollis. The cause of torticollis is not settled. Most probably it is due to hemorrhage into the sterno-cleido-mastoid at the time of birth. The immediate result is a shortening of the sterno-cleido-mastoid on that side, producing flexion to the side that is shortened and turning the chin to the opposite shoulder.

There are several types of so-called congenital torticollis. One is where the physician discovers it and sends the patient for treatment early. Those are easy cases. I will show you one of those cases. Another type is where the patient comes to the hospital at three, four, five or six years of age, or at any time before ten years. With proper corrective treatment the result is fair. The third type is where the patient comes for treatment after the deformity has persisted for ten years and more, where secondary deformity has set in.

The first case, a girl of six had a right torticollis with marked deformity. She had to have a tenotomy, then was put in plaster of paris. If you look at her back, there is no secondary or other deformity present.

The second case a boy of sixteen, had very much the same treatment. He, however, shows very definitely the secondary changes that take place. He has a scoliosis, which is very insusceptible to any correction. He has all the deformities from the head down to the hips. They both had similar treatment.

The point I want to bring out is that so far as treatment goes, we cannot gain much with local treatments, by massage or electric treatments. It is a question of posture. You have to re-educate the patients entirely, give them a new viewpoint. The minimum is treatment for twelve months. Many of the patients have to continue treatments even after such a period.

Congenital Abnormalities of the Lumbo-Sacral Region as Causes of Persistent Low Back Pain. Edwin Pyle, M. D., in New England J. M., 204:21:1083, May 21, 1931.

To appreciate the variations from the normal it is first necessary to know what normal is, and have an understanding of the mechanics involved.

Normally, there are five lumbar vertebrae, but the presence of four or six is not uncommon, and, so far as numbers go, is of no special importance.

It is in the variation of the component parts of the fifth lumbar vertebra and the sacrum, and their relationship to each other, that the causes of persistent low back pain are found.

A variation in the direction in which the articulations between the fifth lumbar vertebra and the sacrum face is a common abnormality. If both face anteroposteriorly they give an increase in mobility of the lower back, which naturally detracts from its strength. The joints, therefore, between the fifth lumbar vertebra and the sacrum, which do not work in unison, either because they face in different directions, or are not directed laterally to give strength, can be the cause of persistent low back pain.

Enlarged and elongated spinous processes, which come into contact with each other when the trunk is hyperextended, cause pain and tenderness at the site of contact. This condition is recognizable in lateral x-ray plates.

The transverse processes of the sacrum normally fuse together, as did the bodies of the sacrum, to form the complete sacral bone. In lumbar vertebrae the transverse processes retain their individuality, in normal cases. It is not uncommon, however, to see a fifth lumbar vertebra that, on one side or both, has become completely or incompletely fused through its transverse process with the sacrum. This condition is known as sacralization. The enlarged, overgrown transverse processes, when incompletely fused with the sacrum, cause contact between bones where there is no fibro-cartilage to separate them, and where no joint cartilage exists.

Failure of fusion of the pedicles, where the posterior elements (the laminae, spinous and transverse processes) do not join with the anterior element (the body), permits of a condition known as spondylolisthesis, where the fifth lumbar vertebral body slips forward into the pelvis, to varying degree.

A rarer condition, and one about which little has been written, is the backward displacement of the fifth lumbar vertebra.

Abnormalities of the body of the vertebra are less common, the chief consideration of the body being in its relationship to the sacrum, since through it the weight of the trunk is transmitted to the sacrum.

There are three common variations in the shape and position of the sacrum in its relationship to the back that are of great importance; namely, an excessive forward tilting, an exaggerated curve of the bone, and a failure of a fusion of one or more sacral segments.

The treatment of every case is different. Unfortunately, the orthopedist sees most of his cases when they are six months to a year old. Their musculature has often been weakened by the too long use of braces.

The patient's physique, intelligence, and cooperation, and the presence or absence of arthritis, are factors to be considered in a choice of treatment. Every patient should have a careful examination for foci of infection, which are liable to shower intermittently the blood stream with either attenuated bacteria or protein toxins which keep up the activity in the injured region. A

careful dietary routine from the start will aid intestinal elimination and combat a tendency to take on weight. The patient needs a good night's rest; otherwise, his back muscles are kept in constant state of contracture so that myositis becomes a complication. He should sleep on a fracture bed. This is more important than the use of any brace or belt at night. A steel brace should be given only in selected cases, especially when the patient is a fit subject for surgery; otherwise, a canvas belt is preferable since it does not immobilize so completely. A steel brace cannot be fitted or adjusted to a back that is distorted by protective muscle spasm; it is necessary to wait and fit it after the patient has been relaxed by prolonged rest in bed. Steel braces after operation should be removed within three months; this gives sufficient time for operative fusion to have been completed. Heat and massage give temporary relief; they are necessary for the improvement of circulation, and to restore mobility after operation. Too much importance, however, is not to be placed upon this form of treatment.

For all these abnormalities the operation of choice is a spine fusion, whereby the fifth lumbar vertebra and the sacrum are joined to one another by bone formation, through their articulations, through their laminae, and through their spinous processes. It is wise to make the area of fusion as short as possible, removing, however, any lumbar spinous processes that are in contact. Other lumbar vertebrae are not included in the fusion area if there is no special indication to do so. Relief from pain after operation is not immediate; it will generally disappear during the third or fourth week in bed, but will often recur when the patient becomes ambulatory in the eighth week. It is important here that baking and massage be given, and that the brace be discarded twelve weeks following operation. The loss of motion caused by the fusion between the fifth lumbar vertebra and the sacrum is so slight that it is imperceptible after the back becomes thoroughly relaxed following its long period of immobilization.

Relationship of Weak Feet and Back Pain. Richard F. Berg, M. D., Portland, Ore., in Western J. Surg., Obstet., & Gynec., 39:4:261, April, 1931.

SUMMARY

The symptom syndrome in a typical case would be something like this:

A patient is seen complaining of pain in the back, duration of which may be from a few weeks to months, with radiating pain over the hip region, often extending down the back of the thigh and calf. Patients with associated arthritis often complain of more symptoms in the morning upon arising and at night before retiring. The onset is usually insidious and may or may not be associated with mild strain. The cause is generally known or masked by other symptoms which in a normal person would pass without recognition. The point stressed here is that the condition has been present for some time without giving troublesome symptoms. The back is no different from any other organ of the body. It has its limitations of strain and stress, and if accessory factors, such as weak feet, improper posture, and arthritis of the spine lead to further unnecessary stress and strain, and add further mechanical disadvantages to an area, painful back disability is sure to result. Remove part of the aggravating cause, and you have done a great deal toward relieving the syndrome. Living tissue has a great recuperative power once the abnormal handicaps are removed.

Treatment should include: First, the correction of the weak feet, and secondly, support of the back until readjustment can take place, and thirdly, attention to accessory factors such as foci of infection, corrective exercises for improper posture of feet and spine, and building up of the general resistance of the body. This latter point refers to physiotherapy, proper diet and allied features.

Correction of the Spine.—The acute cases, associated with severe pain and disability will require rest in bed on a fracture board with gradual hyperextension of the lumbar spine. This may best be done by the adjustable frames which are especially built for this purpose. In mild cases, strapping, associated with baking and massage will often relieve the distress. Plaster cast and spinal braces are only used in cases which resist the milder types of treatment, and should be maintained until the symptoms have disappeared. Corrective exercises for faulty posture are instituted at an early date, and should tend toward developing the spinal and lumbar groups of muscles.

Electrodiagnosis. Richard Kovacs, M. D., New York City, in Clin. Med. & Surg., 38:5:323, May, 1931.

A suitable electrical stimulus, applied to a motor nerve, elicits a contraction in all of the muscles supplied by the nerve below the point of stimulation. A suitable electrical stimulus, applied to a muscle, elicits a contraction of the muscle itself and may also spread to the neighboring muscles.

Every nerve and every muscle, unless deeply covered by other muscles, possesses a small area where it is most easily excitable and where a visible contraction can be elicited with a minimal amount of stimulation. This area is called the motor point.

Equipment.—(1) A source of constant (galvanic) current—a galvanic wall plate or a motor generator, equipped with a rheostat (for regulating the current) and a milliampere meter (for measuring the current);

(2) A movable faradic coil of moderate size (about twelve centimeters), activated by a source of constant current;

(3) A pair of conducting cords;

(4) Testing (active) electrode (a metal disk one inch in diameter, covered with gauze), mounted on a handle with an interrupting arrangement (make and break key);

(5) Dispersive lectrode (a large, gauze-covered metal pad about three by five inches in size);

(6) Two per cent salt solution, for wetting the electrodes;

(7) A set of testing charts (Erb's diagrams), showing the location of the motor points.

Testing of normal muscles (example, biceps of arm): Preparation: (a) Warm and moisten the flexor surface of the upper arm by a few minutes' exposure to luminous heat or by the application of a wet hot towel:

(b) Place the arm in a relaxed position, by resting the elbow and forearm on a good sized pillow:

(c) Apply the well moistened dispersive electrode in good contact over the extensor surface of the arm; and the active electrode in good contact over the middle of the biceps.

1.—The faradic test: The two electrodes are connected to the two binding posts of the faradic coil (it makes no difference which post and which cord is used). Switch on the faradic current. (You hear the humming of the vibrating armature and see a fine sparking at the point of contact). Hold the key of the interrupting handle in "make" position (current flows steadily) and advance the secondary winding, from "O" position upward. The subject feels, at first, slight stinging under

the testing electrode and, after sufficient advancing of the secondary winding (usually at two or three centimeters), a tetanic contraction of the biceps occurs. Breaking contact on the key stops the contraction at once.

2. The test with interrupted galvanism: Connect the active electrode to the negative pole of the galvanic supply (use green cord, according to custom), and the indifferent electrode to the positive pole (use red cord). Hold the key of the interrupting handle in "make" position, advancing the rheostat slowly and watching the current flow, as indicated by the milliampere meter. The subject feels a slight stinging under the active electrode, no matter how far the current strength is increased, no contraction occurs while the current flows evenly.

When the meter indicates a flow of about three milliamperes, break the current, and a brisk single contraction (not tetanous) of the biceps occurs. Repeat the test by trying the "make" of the galvanic current (advance the rheostat first and press down the key later). As a rule, less current is needed to produce contraction at "make." When more than three milliamperes is needed, in a normal muscle, at the "make" of the current, the testing electrode may be off the motor point.

Testing paralyzed muscles: The technic is the same as in testing normal muscles.

Electrical testing in paralysis also commences with the faradic test. Fully paralyzed muscles do not show any contraction under faradism. In case of doubt, the comparison with the unaffected side will serve as a guide.

The test with interrupted galvanism in fully paralyzed muscles shows a sluggish, worm-like contraction, and the need of a much higher milliamperage than on the unaffected side. The formula of the full RD (reaction of degeneration), as applied to muscles is: no response at all to faradism; sluggish response to galvanism; partial RD signifies a feeble response to faradism and sluggish response to galvanism; absolute RD signifies total lack of response to any electric stimulation. It takes about ten days after an injury or disease for the RD to develop.

The Effect of Stimulation on the Degeneration of a Severed Peripheral Nerve. D. D. Cook and R. W. Gerard, from the Department of Physiology, University of Chicago, in Am. J. Physiol., XCVII:3:412, June 1, 1931.

A method of considerable range of usefulness for the continued stimulation of nerves in situ in living animals by means of buried electrodes is described.

It has been used in the present series of experiments on dog sciatics to determine the influence of such stimulation on the course of degeneration of the peripheral portion of a severed nerve.

The experiments show that a cut nerve loses its ability to conduct more rapidly when stimulated than when at rest.

Data on irritability and on muscle response lead to the conclusion that individual axones fail in temporal sequence. In each axone the pressure rises and conduction is probably depressed, until it has passed a critical value at some point along the fibre, when conduction is blocked.

Degeneration of a nerve process isolated from its cell bond might be due to lack of impulse conducted by it or the necessary substance spreading along it. The evidence considered favors the second possibility.

The Minimal Faradic Current As an Aid to Diagnosis. By Lt. Col. J. K. McConnell, D. S. O., M. C., C. S. M. M. G., Biophysical Assistant working at St. Thomas Hospital, in The Lancet, CCXX:5621:1134, May 23, 1931.

Faradic currents of weaker strength which do not elicit muscular contraction are of value in diagnosis, the sensations reported by the patient being an index. Unduly sensitive areas or spots may be located in muscles, fasciae, ligaments and joint capsules. As a rule these do not coincide with areas of tenderness to pressure, and where this is the case, the use of the minimal faradic current is of definite diagnostic value.

Spots unduly sensitive to faradism along the course of nerve trunks and hypersensitiveness at cutaneous levels may be of importance, but cannot be included within the compass of these notes.

CLINICAL VALUE

The diagnostic use of minimal faradism falls under three principal headings:—

(1) The location of hypersensitive areas in recent and chronic trauma; especially in the back;

(2) The discovery of certain areas from which pain is referred;

(3) The differentiation between the origins of certain pains.

Recent or chronic trauma, especially in the back.—When wide-spread tenderness to touch and extreme pain on movement is present or when localization of tenderness to pressure is poor, the local treatment of small areas hypersensitive to faradism has been found to give marked relief.

Where residua of recent trauma exist, or when the site of origin of pain is hard to determine (either in sub-acute recent or chronic mild injury), minimal faradism fills a definite role, especially when tenderness to pressure is absent.

Referred pain.—Pain may be referred from areas which are unduly sensitive to minimal faradism, although normal or only very slightly tender to pressure. Cases of this have been found in the electrotherapeutic department of St. Thomas Hospital and also in private practice. With certain patients the local treatment of such an area, which had previously remained unsuspected, gave a speedy relief from referred pain.

Differentiation of origins of various pains.—This difficult task is often facilitated by minimal faradism. Pain long ascribed to osteoarthritic joints has been found to clear up when soft structures unduly sensitive to faradism have been treated. The value of this electrical test will be appreciated by those who hold that this type of joint may cause referred pain only in certain acute phases.

Pain which appeared to be referred may be shown to be of local origin. This has been found as regards pain in the knee, around the ankle, and in the foot.

Arteriosclerotic Disease of the Extremities. Amos Maverick Graves, M. D., New Orleans, in Am. J. Surg., XII:1:32, April, 1931.

CLINICAL FORMS

Intermittent claudication, which is not to be regarded as a disease per se, is frequently the only symptom present for many years.

Intermittent claudication may be accompanied by other evidences of impaired circulation, such as ischemia on elevation of the part, erythromelia on lowering the extremity and coldness and paresthesia.

Without intermittent claudication and without the occurrence of trophic disorders, there may occur pallor of the foot when it is neither elevated nor dependent; erythromelia when it is dependent, coldness or cyanosis of the part, and absence of pulsation in dorsalis pedis and tibial arteries.

Forms as mentioned, because of exposure to cold or other insult, may be complicated by trophic disturbances or gangrene, either of which may become infected.

Pain of intermittent claudication may be so augmented by that accompanying chronic rubor that walking becomes too much of an ordeal.

In cases with intermittent claudication or even with a combination of a number of symptoms, a developing collateral circulation may bring about improvement, or thrombosis may occur suddenly in the popliteal or femoral artery giving rise to the following complex. The patient will experience sudden pain in the calf or in the foot, and there will be marked pallor and coldness of the foot with loss of pulsation in the pedal vessels and not infrequently even in the politeal or femoral vessels or both. After a variable time trophic disorders manifest themselves.

Cases presenting symptoms of faulty circulation are likely to show trophic changes.

Buerger states that some patients, not necessarily senile, with extensive obliteration of the arteries of the lower extremities, may present a picture of chronic atrophy associated with slow development of gangrene that may persist for months or years without infection and without complicating moist gangrene.

TREATMENT

Prophylactic measures to prevent complications in arteriosclerosis are essentially the same in the diabetic gangrene as in the non-diabetic. The patient is warned of the dangers of excessive walking, exposure to cold, the wearing of ill-fitting shoes or darned socks, the excessive use of alcohol and tobacco, and is especially instructed not to cut or trim ingrowing nails, corns, calluses and bunions. In addition, the diabetic should be under the supervision of a cooperating internist.

In patients having impending gangrene or in those not so threatened, but willing to cooperate, an attempt should be made to improve circulation. This may be obtained by the institution of Buerger's postural exercises, hot sitz baths, contrast baths, diathermy, heat tents, and the administration of typhoid vaccine.

Trophic disorders should be promptly treated to obtain healing. Rest of the part is essential. Close observation will frequently reveal that a more nearly normal color appears with a certain degree of dependency. Dressings kept moist with hot hypertonic salt solutions are of most value in combating infection.

With dry gangrene of one or more toes showing a tendency to demarcate, conservative means should be given a trial. Dry heat is administered and postural exercises practiced. When demarcation is established below the planter arch, the necrotic parts should be pulled away to facilitate healing by granulation. Local anesthesia should never be used for obvious reasons. Should the gangrenous process continue to spread amputation through the thigh is immediately indicated.

Should gangrene be precipitated by infection, conservative measures will suffice if localization occurs. However, if the gangrene is due to circulatory deficiency and becomes subsequently infected, the picture is a different one. Dry heat and exercises are contraindicated as they facilitate extension of the process. Immobilization with the part elevated is indicated as are means to induce drainage and combat infection.

Numerous radical measures to increase collateral circulation have been suggested. Some have proved worthless and others have not been sufficiently used to warrant the drawing of any definite conclusions.

Surgery of the sympathetic system can hardly be expected to produce vasodilatation in non-elastic arteries and is therefore of no value.

Means to increase the circulation in the presence of mild infection should be judiciously employed. Dry heat is undesirable, but hot baths are of value when it is known that burns will not be permitted to occur in the presence of a hypoesthesia. Cluzet and Chevallier, in France, have reported excellent results from the use of diathermy. Buerger's exercise is of distinct value, and limited active exercise is beneficial in selected cases. Injections of typhoid vaccine, though not yet used extensively should prove of value.

Occlusive Disease of Arteries of the Lower Extremities. By W. K. Livingston, M. D., Portland, Oregon, in West. J. of Surg., 39:3:173, March, 1931.

One of the early evidences of occlusive disease of arteries of the lower extremities is intermittent claudication. When a patient reports that he has pain in the calf muscles after walking some distance and is able to resume only after a short rest, the diagnosis of intermittent claudication is easily made. Very commonly, however, the patient states that his pain is in the foot or ankle and is convinced that he has trouble with his arches.

Another early sign is change in temperature and color in the affected feet. The patient may note that his foot is unusually white and cold after exercise and that it assumes a deep, dusky red color when hung down. He may report that his feet are always cold, particularly after exposure.

Again, in the presence of occlusive lesions of arteries there seems to be a decided tendency to trophic disturbances in the feet. Callouses are prone to form on weight-bearing points, toe nails may become opaque and brittle and greatly thickened. Small cuts, local infection or superficial burns may resist treatment or prove the starting point for gangrene. Infections at the corner of a nail are very common and the patient urges that the nail be removed since he feels that his pain results from some disturbance beneath the nail.

It is highly important that a diagnosis of occlusive disease be made before the advent of gangrene.

Advice to the Patient—The following type forms of directions have been found helpful:

1. Keep the skin scrupulously clean.
2. Wear well-fitted, comfortable shoes over woolen socks which are frequently changed. If the feet tend to be cold, felt shoes may be worn.
3. Keep the skin soft by gently rubbing in cocoa-butter or oil each day.
4. Exercises: Lie down and elevate the foot to about sixty degrees so that it becomes pale. Then hang it down below the body level until it becomes dark red again. Repeat this exercise several times in succession. If possible, carry out such a series two or three times daily.
5. Contrast baths: Prepare two tubs or pails of water, one at about 55° F. and the other about 105° F. Immerse the foot in the cold water for a minute and then place in the warm water until it feels warm again. Repeat this process several times in an hour and do this bathing twice a day.
6. Be careful to avoid injuries to the skin. When any infection or injury occurs consult your physician at once.

SPECIAL FORMS OF TREATMENT

Diathermy has been advocated by some as of value in improving the circulation. It may be used locally, or in skilled hands used to induce an artificial tempera-

ture. Great care should be exercised to avoid burns.

Silbert believes that injection of five per cent salt solution is of value in cases with thrombo-angiitis obliterans.

Rest in bed with the foot exposed to the air warmed by some form of radiant heat may be indicated in a case resistant to the ordinary treatment.

The use of foreign protein injections is of considerable value in cases of thrombo-angiitis obliterans.

Theobromine and the nitrites have proven of some value in improving circulation and may be of particular value in the relief of muscle cramps coming on at night.

No form of treatment, not even operations on the sympathetics has yet been given sufficient trial to establish superiority over other forms. Probably all of them do some good in selected cases. It is not my purpose to stress any particular treatment, but to call attention to the importance of early diagnosis and prophylactic measures. The early recognition of thrombo-angiitis obliterans will suggest therapy that may safely carry the patient through the period of threat to nutrition, into the terminal stage of canalization of the thrombosed vessels. The early recognition of advanced arteriosclerosis permits the institution of measures which may insure the patient comfort as well as safeguard the nutrition of his feet for the remainder of his life.

Acute Prostatitis—Its Treatment with Heat Applications. Burnett W. Wright, M. D., Los Angeles, in Calif. & Western Med., xxxiv:5:336, May, 1931.

For the past eighteen months we have treated our patients who were suffering from acute prostatitis and vasiculitis, and who were not frankly abscessed, by prolonged rectal irrigations, with solutions heated from 105 to 120 degrees F., depending on the tolerance of the patient to the heat, and on the degree of the inflammation present in the tissues. A special table, with provisions for controlling the temperature of the solutions employed, and for taking care of the return flow was devised.

The apparatus consists of a substantial table twenty-two inches wide and fifty-one inches long, with a top of monel metal. A comfortable pair of Bierhoff leg holders are extended down through the corners of the table top into the front iron pipe legs. A Leonard thermostatic mixing valve is connected to both the hot and cold water leads as furnished by the building. The tank has a removable top, a glass water gauge for measuring the level of the solution, a funnel for introducing medicaments into the solution, a thermometer installed in its base and readable from the outside, an overflow from near its top, connected to the waste, and a lead for conducting the solution to the table. This lead ends in a nozzle controlled by a cut-off, conveniently placed above the pan. One end of a short rubber tube is fitted to the nozzle, the other to the intake of the particular rectal tube to be used.

Two tankfuls, or ten gallons, will last about an hour, when the flow is correct.

We have seen no evidence of proctitis following these treatments, in spite of the fact that some patients have had as many as ten daily irrigations.

In a number of instances we have felt that the treatment aborted threatened suppuration and abscess formation. The relief from pain, frequency and dysuria under this treatment has been noticeable. The patient feels a decided sense of well-being afterward, and many cases of prostatitis remain ambulatory that might otherwise be bedridden. In acute posterior urethritis and catarrhal prostatitis the improvement has often been striking, the second glass quickly clearing, making possible an earlier return to local treatment. As an adjunct to massage and irrigation in old chronic cases of prostatitis which have resisted treatment it is distinctly valuable.

Wall Street's Latest Activity—The Modern Industrial Clinic. Charles F. Neergaard, New York City, in The Modern Hospital, xxxvi:6:61, June, 1931.

On the 9th floor of the Stock Exchange Building at the corner of Wall Street and Broad Street, New York City, is a clinic where no effort has been spared to achieve a scientific arrangement of departments, complete and up-to-date equipment and great efficiency of operation.

This clinic is the outgrowth of a small medical department which the Exchange has maintained for several years.

Some idea of the completeness of the clinic may be gathered from the fact that the x-ray department has every facility for diagnosis and treatment and that the up-to-date equipment in the physical therapy department includes ultra-violet and infra-red lights and diathermy apparatus.

The physical therapy department is in practically constant use, but treatment is given only by a doctor's prescription. The solarium is a factor in reducing susceptibility to colds.

Included in the clinic are facilities for the diagnosis and treatment of dental troubles, a laboratory, an electrocardiograph room, equipment for basal metabolic determination and an eye, ear, nose and throat department. In addition to the member's waiting room there is a general waiting room for employees.

The operating room, x-ray room and a number of other units are heated and ventilated by a heating and ventilating unit which supplies fresh filtered air without creating drafts and without making it necessary to have the windows open.

Although the department is intended primarily to watch over and promote the health of the employees of the Exchange, it also protects the health of the Exchange members and in an emergency treats outside patients.

Is Your Hospital Interested in Physiotherapy? Enid G. Graham (Mrs. Duncan Graham), Toronto, Member of the Board of Directors, Canadian Association of Massage and Remedial Gymnastics; in Canadian Hosp., 8:5:28, May, 1931.

We are permitted to quote the following information received from Dr. F. W. Harvey, director of the physiotherapy department of the Montreal General Hospital, and director of the McGill School of Phyical Education.

"Physiotherapy has now become such a big thing that we find very few men with a knowledge of all its branches. The result is that in most hospitals, physiotherapists confine their work to electro-therapy and very little attention is given to massage and re-education work. I feel that in our hospital the work is well-balanced and that the essential thing in running a physiotherapy department is to have good technicians.

"I certainly think such a department, properly conducted, should pay its way. Of course much depends upon the number of private patients receiving treatment. Our department at the General nearly pays its way, in spite of the fact that most of our treatments are for public cases, for whom no charge is made. . . . At the Western Division, which is also under my charge, the Department has been run at a profit, as a larger number of private patients is treated there."

Dr. George G. Greaves, director of the physiotherapy department, Vancouver General Hospital, allows us to quote the following:

"If such a department is established, it will be found

to be of assistance to all the other services and its usefulness will be in direct proportion to the completeness of the department, and the competence of the staff. Services such as orthopedic, ear, eye, nose, throat, surgical, general medicine, maternity, neurological, skin, tuberculosis, genitourinary, all make use of the department and to an ever increasing extent."

In smaller hospitals Dr. Greaves suggests that a medical man should give part time to supervision of the department.

It would seem to us that this idea of a part-time appointment for a medical man might be quite feasible for the trained technician, in the smaller hospitals. Recently St. Catharines General Hospital and the Niagara Peninsula sanitarium have decided to employ an occupational therapist, who will divide her services between the two institutions. Why should not this idea be utilized in the employment of a physiotherapist, or of one worker who has specialized in both physiotherapy and occupational therapy, as has been done recently in one or two cases?

Physiotherapy—A Specialty for Nurses. Harry Eaton Stewart, M. D., Director New Haven School of Physiotherapy, New Haven, Conn., in Trained Nurse & Hosp. Rev., lxxxvi:3:327, March, 1931.

Physiotherapy is perhaps the newest specialty open to the graduate nurse.

The growth of no medical specialty has approximated that of physical therapy. Hospital departments have increased from less than one hundred to over twenty-one hundred in three years. There have not been graduated from the schools enough technicians to even head this number of departments, to say nothing of the number required for physicians' offices and clinics. The result has been to fill these positions temporarily with persons taught only how to manage apparatus—mechanicians rather than technicians. A parallel to this condition occurred in nursing twenty or thirty years ago when many competent but non-graduate nurses held good positions, with little difference in salary apparent. How changed are conditions today.

The great amount of detailed knowledge now required of a competent physiotherapy technician is constantly raising the standards and increasing the length of required courses in the schools. It is more difficult for us to crowd into the curriculum of the school year course all the necessary subjects than it was to include them in a six weeks' course ten years ago.

In summing up this field as a specialty for the graduate nurse the salient points are these: The work offers an opportunity for unusual service in a new field; is interesting; remunerative; with more leisure for study and recreation; and has a future of growing importance in the practice of medicine.

The Drinker Respirator Treatment of the Immediate Asphyxia of the Newborn—with a Report of 35 Cases. Douglas P. Murphy, M. D., Ross B. Wilson, M. D., and James E. Bowman, M. D., Philadelphia, Penna., in Amer. J. Obstet. & Cynec., xxi:4:528, April, 1931.

COMMENT

It is evident that in maternity hospitals at least, asphyxia neonatorum is a major obstetric problem, in view of the high percentage of infants that exhibit this condition (approximately 5 per cent). It is also apparent that many asphyxiated infants, when properly cared for, ultimately survive. The cause of the asphyxia, at the time of birth, cannot always be determined. Regardless of this, or of the degree of asphyxia, artificial respiration should be instituted, and be maintained as long as any evidence of life exists. It is presupposed, however, that the upper air passages have been cleared of all obstruction material before any form of artificial respiration is employed.

In the recent report of Murphy and Coyne, one infant failed to exhibit a spontaneous breath until artificial respiration had been maintained continuously for one hour and four minutes. From this, and from other observations, it is believed that no commonly employed method of artificial respiration (including the Drinker method) actually incites the respiratory apparatus into activity in infants suffering from deep asphyxia, though it may act as a stimulant. The chief indication therefore is to maintain an adequate degree of pulmonary ventilation over a long period of time. It is possible that during this period the respiratory center of its own accord may begin to function, and to a degree sufficient for the needs of the organism.

If this theory is tenable, the Drinker respirator offers the best method of treating asphyxiated newborn infants, since by its use it is possible to maintain an adequate pulmonary ventilation for an indefinite period of time. Its advantages are the following: The principle of its action is sound. The negative pressure acts upon each square inch of the chest equally, without the application of undue pressure at any single point. The machine has already reached a high degree of perfection, and the limits of safety of its use have been studied upon experimental animals. The machine can be so adjusted that the normal rate and depth of breathing of the newborn infant can be closely approximated, to insure adequate ventilation without at the same time producing symptoms of overventilation.

Treatment is available at an instant's notice, and may be carried on for an indefinite period, without effort on the part of the attendant, and with the minimum expenditure of energy on the part of the infant. If the latter is immature, and later respiratory failure is likely to occur, the infant can live in the machine so that treatment can be started at a second's notice. The negative pressure chamber is so built that the body can be maintained horizontally or head down. The latter position is the best during treatment, since it aids the gravity discharge of fluids from the upper air passages.

The infant can be maintained in surroundings of any temperature desired, above that of room temperature. At the same time its head is exposed to the cooler room temperature, which has a higher and therefore more desirable moisture content. Throughout the treatment the infant lies perfectly quiet, except for the movement of the chest wall induced by the machine, and is not subjected to any force that cannot be both controlled and measured. Nor is he subjected to the dangers of pulmonary infection, always a possible sequel of mouth-to-mouth inflation.

In conclusion it may be said that the use of the Drinker respirator, in its clinical application to the treatment of asphyxia neonatorum, has passed the purely experimental stage of its development; that when employed, using the amount of negative pressure (8 to 10 cm.) and breathing rate (45 per minute) as herein advised, there need be no fear that any possible damage can result to the infant so treated. The apparatus is so simple of construction and of operation, that its operation can be readily understood by the average person, which fact gives it a very wide field of usefulness.

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APPLY TO
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Tenth Annual Session, American Congress of Physical Therapy, Oct. 5, 6, 7, 8, 1931, at Hotel Fontenele, Omaha, Nebr.

The tenth anniversary session of the American Congress of Physical Therapy will be held October 5, 6, 7, 8, 1931, at the Hotel Fontenelle, Omaha, Nebraska. The Congress has always endeavored to present a program of high quality, and while each year has seen a steady improvement, this year's program is of such a standard that it will be difficult to surpass in the future. Appreciating the desirability of clinics and clinical demonstrations, the program committee has set aside the mornings for these purposes. It will be the first time that the society will have available ample clinical material for medical and surgical services. The cooperation of the University of Nebraska, College of Medicine, and the Creighton University School of Medicine has made this possible. In the section on Eye, Ear, Nose and Throat, tonsil clinics will be conducted daily during the first three days of the meeting. Electrosurgery for tonsils has found a definite place in the armamentarium of many surgeons. Prominent specialists will demonstrate the various methods and technics now being employed.

For preliminary program and other information write to the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

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